MINES DEPARTMENT



SIXTEENTH ANNUAL REPORT

SECRETARY FOR MINES

for the Year ended 31st December, 1936

AND THE

TWENTY-NINTH ANNUAL REPORT

H.M. Chief Inspector of Mines for the same period with a Statistical Appendix to both Reports

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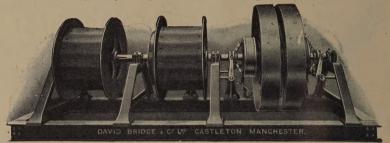
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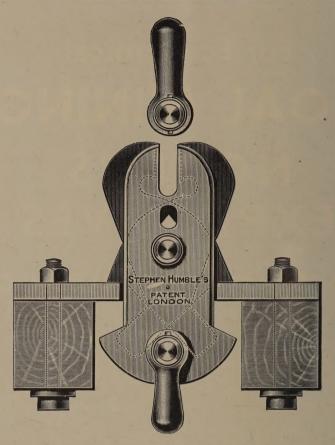
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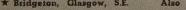


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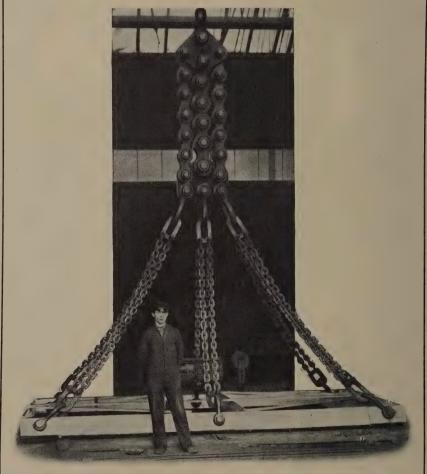


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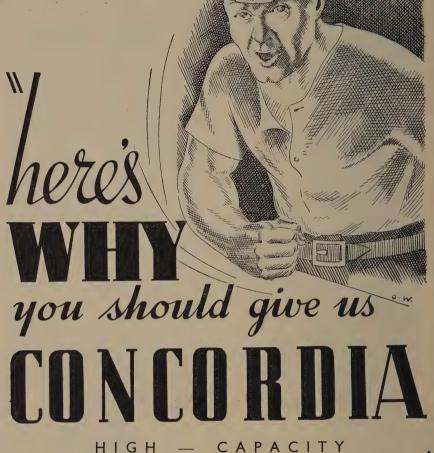
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CONTENTS

Part I.—The Coal Mining Industry in 1936:	PAGE
1.—General Review	3
2.—Fuel Treatment and Utilisation	14
3.—Part I of Coal Mines Act, 1930	22
4.—Wages and Profits	26
5.—The Miners' Welfare Fund	32
" II.—Other Mining and Quarrying Industries in 1936	40
Group 1.—Iron Ore and Ironstone	41
2.—Non-Ferrous Ores:	
(a).—Tin	43
(b).—Lead and Zinc	45
,, 3.—MINERALS (OTHER THAN METALLIFEROUS ORES)	
USED MAINLY IN IRON AND STEEL-MAKING	
AND OTHER SMELTING PROCESSES	47
,, 4.—Minerals used mainly in China, Pottery	
AND GLASS MANUFACTURE	48
,, 5.—Minerals used mainly for Building, Road-	10
MAKING, LIME, CEMENT, CONCRETE, &c	49
,, 6.—Other Minerals	50
" III.—Proceedings under Part I of the Mines (Working	00
FACILITIES AND SUPPORT) ACT, 1923, AND PART II OF	
TACILITIES AND SUPPORT) ACT, 1923, AND FART II OF	50
THE MINING INDUSTRY ACT, 1926	52
" IV.—HEALTH AND SAFETY:	
1.—ROYAL COMMISSION ON SAFETY IN COAL MINES	55
2.—Public Inquiries and Committees:	
(a) Inquiries into Mining Accidents	55
$\langle b \rangle$ Other Inquiries	56
3.—REGULATIONS AND ORDERS	56
4.—Mine Lighting	58
5.—The Provision of Firedamp Detectors for use	
BY WORKMEN	61
6.—The Coal Mines General Regulations (Winding	
AND HAULAGE) 1937	63
7.—Safety in Mines Research Board	64
8.—Testing Work	65
(a) The Testing Station, Sheffield	65
(b) The Testing Station, Buxton	68
(c) The Testing of Rescue Apparatus	70
9.—The Training of Boys	70
10.—Statutory Examinations for Colliery Officials	72
11.—Plans of Abandoned Mines	73
TWENTY-NINTH ANNUAL REPORT OF H.M. CHIEF INSPECTOR OF	
MINES UNDER THE COAL MINES ACT, 1911	75
REPORT OF THE PETROLEUM DEPARTMENT	103
Map of Licensed Areas opposite page	
APPENDICES:	10-
	11
A.—STATISTICAL TABLES	11
B.—List of Official Committees, &c., in connexion with	0.1
THE MINING AND QUARRYING INDUSTRIES	213
C.—CHARTS	
INDEX	229
A complete list of the publications of the Mines Department (Min	
Quarries Form No. 1) may be obtained gratic from H M Stationery Off	

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SIXTEENTH ANNUAL REPORT OF THE SECRETARY FOR MINES FOR THE YEAR ENDED 31st DECEMBER, 1936.

PART I.

THE COAL MINING INDUSTRY IN 1936

1. GENERAL REVIEW.

Towards the end of 1935 the Mineworkers' Federation of Great Britain made demands for an increase in rates of wages and for their regulation on a national basis. A stoppage of work was threatened but after prolonged negotiations between the owners, the workmen, and the Secretary for Mines, a settlement was effected in January, 1936. The basis of the settlement was threefold, first that varying advances of wages would be granted immediately in the different districts; secondly that the owners agreed to co-operate with the Mineworkers' Federation in setting up a Joint Standing Consultative Committee for the consideration of all questions of common interest and general application to the industry, not excluding those applicable to the determination of wages by District Agreements; and thirdly that with a view to putting the industry on a proper financial basis, the coal owners undertook that by the middle of 1936 an organisation for the complete and effective control of the sale of coal would be set up in each coal mining district, with central co-ordination. The Government laid down three conditions with which the Schemes were to comply, viz.:—

(1) They were to cover all coal owners in each district and

have a measure of permanency;

(2) They were effectively to prevent inter-colliery competition;

(3) They were to be so drawn that evasions could not take place.

The Selling Schemes became operative from the 1st August, 1936. In the meantime, part of the cost of the increases in wages which had come into operation from the beginning of the year was met by voluntary agreement on the part of many consumers to increases of 1s. per ton in prices under their existing contracts. At the same time there was a marked increase in the demand for coal and prices hardened in the normal way of business. The combined result of these factors was that the average price of all saleable coal raised during the year was 1s. per ton higher than in 1935.

There was a heavy increase in the demand for coal for home consumption, and in spite of a falling off in foreign shipments

output was more than 6 million tons higher than in 1935.

The improvement in the demand for home consumption was to some extent due to the Government's rearmament programme. The rapid recovery of the iron and steel industry was reflected in an increased coal consumption of $2\frac{3}{4}$ million tons, and consumption at gas and electricity undertakings was $2\frac{3}{5}$ million tons greater than in 1935. The total quantity of coal available for home consumption was nearly 176 million tons, $11\frac{1}{2}$ million tons more than in 1935, and the highest figure for any year since 1927. It was, however, about 8 million tons less than in 1913. The decrease in foreign shipments was mainly due to the cessation of supplies to Italy in consequence of the Abyssinian dispute and to reductions in shipments to Spain which were affected by the Civil War.

Working time at the mines was more regular than in 1935, and the continuous substantial decline in the number of persons employed which has been recorded in recent years was arrested. With the higher wage rates and more regular employment the average amount of cash earnings per wage-earner showed a marked improvement from £118 to £131, and at the same time there was, on the average, a credit balance to the coal owners of nearly 1s. per

ton on all coal disposed of commercially.

World Coal Output.—It is estimated that world coal output increased by about 8 to 9 per cent. in 1936 as compared with 1935 and about 12 per cent. as compared with 1934, being approximately 1,220 million tons. It was still, however, about 7 per cent. or approximately 100 million tons below the peak year of 1929.

The greatest increase in any individual country was in the U.S.A., where output rose by 57 million tons to 436 million tons, practically the whole of this increase being due to the increase in

the output of bituminous coal.

Output in Great Britain increased by $6\frac{1}{4}$ million tons to $228\frac{1}{2}$ million tons, and in the whole of Europe, exclusive of the Soviet Union, by 20 million tons to 517 million tons. In the Soviet Union output of coal and lignite again showed a large increase, viz., from 107 million tons to 122 million tons.

Apart from Great Britain and the Soviet Union the main increases in the European countries were in Germany and the Saar, where output increased by more than 13 million tons, and Poland, Belgium, Netherlands and Czechoslovakia, which together increased their output by about 5 million tons. In France output declined by about 1 million tons. The following table shows the output in the chief European coal-producing countries during the last two years:—

years.				
		Out	put.	Increase (+)
		1935.	1936.	or decrease (-).
		Million Sta	atute Tons.	Per cent
Great Britain		 $222 \cdot 25$	$228 \cdot 45$	+ 2.8
Germany (inclu	ding Saar)	 142.55	155.88	+ 9.4
U.S.S.R	,	 107.00	122.00	+14.0
France		 45.49	44.51	$-2\cdot 1$
Poland		 28.09	29 · 28	$+4\cdot 2$
Belgium		 26.09	27 · 43	+ 5.1
Netherlands		 11.69	12.60	+ 7.8
Czechoslovakia		 10.79	12.16	+12.7

In 1931 and 1932 stocks of coal and coke at mines in Europe were three times as great as in 1929; in subsequent years, particularly 1935 and 1936, stocks declined and at the end of 1936 they were about one third less than in the previous year and only about two-fifths more than at the end of 1929.

Countries.—Total world coal shipments from the chief Exporting Countries.—Total world coal shipments in 1936 showed a downward movement. Shipments of cargo and bunker coal were about 2 million tons less than in 1935 and 50 million tons or 29 per cent. less than in 1929. In the aggregate coal shipments from those countries for which information is readily available amounted to 120 million tons.

Shipments of cargo and bunker coal from the chief exporting countries* in 1929 and from 1933–1936 were as follows:—

		Exp	orts (Cargo and
Year.		Bun	ker Shipments).†
		Milli	on Statute tons.
1929	 		170
1933	 		115
1934	 		122
1935	 		122
1936	 		120
		_	

Germany.—Although world coal exports declined slightly in 1936, exports from Germany and the Saar (including small quantities of bunkers supplied to foreign vessels) increased from 27 million tons in 1935 to $28\frac{1}{5}$ million tons in 1936 (allowance has been made in the 1935 figures for Saar exports from 1st January–17th February, the period during which the Saar was included in the French Customs Union).

When comparison of German exports by destinations is made, it is found that exports to France increased by $\frac{2}{5}$ million tons in 1936 as compared with 1935, but were nearly 2 million tons less than in 1934. The decrease as compared with 1934 was due to the return of the Saar mines to Germany in March, 1935, since when Saar coal deliveries to France have, by agreement, been limited to about 2 million tons per annum. Exports to Italy decreased from $7\frac{1}{3}$ million tons in 1935 to 6 million tons in 1936. These losses, however, were more than offset by increased exports to other markets.

Exports to the Netherlands were about $5\frac{1}{2}$ million tons, to Belgium and Luxemburg more than $3\frac{1}{2}$ million tons, to Czechoslovakia 1 million tons, and to Austria, Hungary, Yugo-Slavia and Switzerland together about $1\frac{4}{5}$ million tons. In 1935, exports to these countries were in all nearly 1 million tons less.

* Including Great Britain, Germany, Poland, the U.S.A., France, Belgium, the Netherlands, Czechoslovakia, Soviet Union, British India, South Africa,

Japan, China, Manchukuo and French Indo-China.

† To make a true comparison of world coal exports adjustment should be made for the Saar. Deliveries from the Saar to France amounted to 4.9 million tons in 1929, 3.9 million tons in 1933, 4.2 million tons in 1934 and approximately 2 million tons in both 1935 and 1936. Saar deliveries to Germany were approximately 1 million tons in each of the years 1929, 1933 and 1934.

A 3

Exports to Scandinavia and the Baltic Sea aggregated 13 million tons as compared with less than 1 million tons in 1935; exports to Denmark, Norway, Finland and Latvia were more than doubled, being in 1936 about 1 million tons. Substantial increases were also shown in the trade with countries in the Mediterranean Sea and North Africa, Southern Europe (excluding Italy) and to North America as will be seen below:—

			Increase (+) or decrease (-) in
	Exports in	n	1936 as compared
	1935.	1936.	with 1935.
	Million Statute	tons.	Per cent.
Scandinavia and Baltic Sea	0.94	1.64	+ 74.5
Central Europe	1.53	1.71	+ 11.8
Southern Europe (excluding Italy)	0.44	0.89	$+102 \cdot 3$
Italy	$7 \cdot 33$	5.93	- 19.1
Western Europe	15.02	15.78	+ 4.3
British Mediterranean and North			
Africa	0.50	0.77	+ 50.4
North America	0.19	0.35	$+ 84 \cdot 2$
South America	0.71	0.67	- 5.6

Poland.—Coal exports from Poland declined by $\frac{1}{2}$ million tons in 1936. Total exports amounted to $8\frac{1}{4}$ million tons as compared with $8\frac{3}{4}$ million tons in the previous year and $13\frac{2}{3}$ million tons in 1929, the peak year for the Polish coal export trade.

Exports to Scandinavia and the Baltic Sea fell from $3\frac{1}{2}$ million tons to about $3\frac{1}{4}$ million tons, to Central Europe from $1\frac{1}{6}$ million tons to $\frac{4}{5}$ million tons and to Southern Europe from $1\frac{3}{5}$ million tons to 1 million tons. Exports to these markets accounted for 60 per cent. of the total exports in 1936.

Exports to Western Europe, however, showed a slight increase from $1\frac{2}{3}$ million tons to 2 million tons.

British Coal Output.—Output in 1936 was $228\frac{1}{2}$ million tons or $6\frac{1}{4}$ million tons more than in 1935, and there has been a steady recovery since 1933 when it had sunk to the low level of 207 million tons. The 1936 figure was, however, $29\frac{1}{2}$ million tons, or $11\frac{1}{2}$ per cent. lower than that for 1929.

Although the reduction in the tonnage shipped abroad continued, there was an increase in output of 1 million tons in the chief exporting districts, as compared with 1935. The figure for 1933 was 103 $\frac{3}{2}$ million tons; for 1935, 110 $\frac{3}{2}$ million tons; and for 1936, 111 $\frac{3}{2}$ million tons. As compared with 1933, output in 1936 increased by 3 $\frac{3}{4}$ million tons in Durham, 2 million tons in Northumberland and 2 $\frac{3}{4}$ million tons in Scotland. The aggregate output for these three districts in 1936 was 2 $\frac{1}{4}$ million tons higher than in 1935. In South Wales, however, output dropped by over 1 million tons as compared with 1935 and was $\frac{1}{2}$ million tons lower than in 1933.

Output in the remaining districts, which produce mainly for the home market, has increased from about $103\frac{1}{2}$ million tons in 1933 to $111\frac{1}{2}$ million tons in 1935 and $116\frac{3}{4}$ million tons in 1936.

Of the increase since 1933, Yorkshire accounted for $5\frac{1}{4}$ million tons; Staffordshire, Salop, Worcester and Warwick for $3\frac{1}{4}$ million tons; Derbyshire, Nottingham and Leicester for $3\frac{1}{4}$ million tons; and Lancashire, Cheshire and North Wales for nearly $1\frac{1}{2}$ million tons.

British Coal Exports.—There was a substantial decline in the quantity of coal shipped abroad, total shipments (including foreign bunkers and the coal equivalent of the coke and manufactured fuel exported) amounting to $50\frac{1}{3}$ million tons as compared with $55\frac{1}{2}$ million tons in 1935 and 57 million tons in 1934.

The progressive decrease during recent years in foreign bunker coal shipments continued; the quantity was 12 million tons as compared with $12\frac{1}{2}$ million tons in 1935. The coal equivalent of coke and manufactured fuel exported in 1935 was $4\frac{1}{3}$ million tons;

in 1936 there was a decline of nearly ½ million tons.

Exports of coal (cargo shipments) amounted to $34\frac{1}{2}$ million tons in 1936, $38\frac{3}{4}$ million tons in 1935 and $39\frac{2}{3}$ million tons in 1934. The almost complete loss of the Italian trade was largely responsible for the decline in total exports. Shipments to that country decreased rapidly during the latter part of 1935 owing to difficulties in securing payment and the total for that year was $3\frac{1}{5}$ million tons as compared with $4\frac{2}{3}$ million tons in 1934; in 1936 the figure was only 60,000 tons. With the termination of the Abyssinian dispute, however, the shipment of a small cargo was recorded in December, and prospects of a considerable recovery in the trade were visible in the early months of 1937. Shipments to Spain were seriously affected by payment difficulties and by the Civil War and declined from $1\frac{1}{4}$ millions in 1935 to $\frac{3}{4}$ million tons in 1936.

Import restrictions continued in force in Belgium and France. Shipments to the former country declined from nearly 1 million tons in 1934 to $\frac{2}{3}$ million tons in 1935 and to $\frac{1}{2}$ million tons in 1936. Exports to France in 1934 were $7\frac{2}{3}$ million tons and declined by $\frac{1}{2}$ million tons in 1935; the quantity in 1936 was practically unchanged, principally owing to a recovery during the latter part of the year, when there was an increase in the rate of monthly quota and supplementary allocations for the import of coal into

France.

The net reduction of exports to European and Mediterranean countries was $3\frac{3}{4}$ million tons and to North and Central America $\frac{3}{5}$ million tons. The latter decrease was accounted for by smaller shipments to Canada which have fallen from $1\frac{3}{4}$ million tons in 1934 to a little over $1\frac{1}{4}$ million tons in 1936. Exports of both anthracite and bituminous coal have been reduced as the result of competition, in the former case from Germany and French Indo-China and in the latter case from the United States of America.

The proportion of sized coal to the total quantity of all coal exported has increased rapidly in recent years: from 11 per cent. in 1927 to $20 \cdot 2$ per cent. in 1930 and $32 \cdot 5$ per cent. in 1935. There was a further increase in 1936 when the proportion was $33 \cdot 8$ per cent.

Coal shipments (including foreign bunkers) from the Bristol Channel Ports were under 16 million tons, a fall of $2\frac{1}{2}$ million tons as compared with 1935, and more than one-half of the reduction for the whole country. Apart from the North West Coast ports which remained at the 1935 level of nearly $2\frac{1}{2}$ million tons, all the other exporting districts lost trade, the reduction from the North East Coast ports being over 1 million tons, from Scottish ports $\frac{2}{3}$ million and from the Humber ports $\frac{1}{2}$ million tons.

The following table shows the Great Britain proportion of the

world coal production and exports:-

Estimated World and Great Britain coal production and exports (including bunkers)

Year.	World Production (Coal and Lignite).*	G.B. Production (Coal).	G.B. Percentage of World Production.	World coal exports.‡	G.B. coal exports.	G.B. Percentage of World Exports.
1913 1924 1929 1933 1934 1935 1936	Million Statute Tons. 1,237 1,222 1,375 1,036 1,126 1,155 1,263	Million Statute Tons. 287 267 258 207 221 222 228	% 23·2 21·8 18·8 20·0 19·6 19·2 18·1	Million Statute Tons. 171 150 170 115 122 122 120	Million Statute Tons. 94 79 77 53 53 51 46	% 55·0 52·7 45·3 46·1 43·4 41·8 38·6

^{*} Lignite in terms of coal—9 tons of lignite taken as equal to 2 tons of coal.

It will be seen that in 1936 the world production of coal was 26 million tons in excess of that in 1913 whilst the production in Great Britain has fallen by 60 million tons. This decrease can be accounted for mainly by the loss of export trade which has taken place owing to (1) increased consumption of native coal in the principal coal producing and importing countries and alternative sources of power, (2) increased efficiency in coal burning appliances, (3) the increased use of oil for bunker purposes and (4) intensified foreign competition.

Trade Agreements.—The Agreement with Denmark, which was due to expire on 20th June, 1936, was continued by a Supplementary Agreement† signed on 19th June, 1936. This Agreement is subject to termination on four months' notice being given by either of the contracting Governments.

Notice was given by H.M. Government during the year to terminate the Agreement concluded with Argentine in 1933, and

a new Agreement* was signed on 1st December, 1936. The fuel provisions, which follow closely those of the 1933 Agreement, are designed to provide for the maintenance of the position of the United Kingdom in the market of the Argentine Republic for coal, coke and manufactured fuel.

The coal-cattle arrangement with the Government of the Irish Free State, under which practically the whole of the Free State market for coal was reserved for the United Kingdom, continued to operate in 1936. Early in 1937 this arrangement was renewed for a further period of one year. Exports of United Kingdom coal to the Free State amounted to 2,459,158 tons in 1936 as compared with 2,067,630 tons in 1935, and 1,039,983 tons in 1934, before the arrangement came into force.

The Agreements with Norway, Sweden, Finland, Iceland, Latvia, Lithuania, Estonia and Germany continued in operation throughout the year, and the Trade and Payments Agreement with Uruguay, referred to in last year's Report, came into operation on 3rd February, 1936. Shipments of United Kingdom coal to these countries and to Denmark and Argentina amounted in 1936 to 14,529,053 tons or 42·1 per cent. of total exports, as compared with 13,755,399 tons and 35·5 per cent. respectively in 1935.

Following the raising of sanctions, negotiations took place with the Italian Government resulting in the conclusion on 6th November, 1936, of Commercial and Clearing Agreements, (1) under which imports into Italy of United Kingdom coal, coke and manufactured fuel are authorised up to a quarterly c.i.f. value of 43·5 million lire. In November and December representatives of the United Kingdom coal trade visited Rome to discuss with the State Coal Monopoly arrangements for the resumption of business.

The Anglo-Spanish Payments Agreement, (2) of January, 1936, referred to in the Report for 1935, was amended by an Agreement, (3) of 6th June, 1936, but, under the conditions created by the outbreak of the Civil War in Spain, these agreements failed to work satisfactorily. The Clearing procedure was accordingly suspended as from 19th December, 1936, it being agreed in principle with the Spanish Government and with the insurgent authorities that the bulk of the sterling obtained from the export of Spanish goods to the United Kingdom would be used for the purchase of United Kingdom goods.

The Trade and Payments Agreement with Yugoslavia, (4) concluded on 27th November, 1936, provides that adequate licences will be issued for imports from the United Kingdom of goods subject to restriction (including coal and coke). The total value of licences depends on the total value of exports from Yugoslavia to the United Kingdom and this total value is distributed amongst the

^{*} Cmd. 5324.
(1) Cmd. 5345 and 5346.
(2) Cmd. 5058.
(8) Cmd. 5250.
(4) Cmd. 5323.

various classes of restricted goods in the proportions of the imports of such goods into Yugoslavia during the year 1935.

International Agreements. Regulation of the Export Market.— The abnormal conditions in the coal export markets of the world referred to in the Report for 1935, continued throughout 1936, and little progress was made towards international regulation of coal exports. The Agreement of 1934 between the United Kingdom and Polish Coal Industries, however, continued to operate satisfactorily.

Coal used at Home for Industrial, Transport, Domestic and all other purposes.—The quantity of coal available for consumption for all purposes in Great Britain has increased by leaps and bounds since 1933, when it amounted to only $148\frac{1}{3}$ million tons. In 1935 it was $164\frac{1}{2}$ million tons, and increased by a further $11\frac{1}{2}$ million tons in 1936 to nearly 176 million tons, nearly $2\frac{1}{2}$ million tons above the figure for 1929. The improvement was very marked in the heavy industries; for instance, in 1936 the increased consumption of coal and coke in the iron and steel trades was equivalent to $2\frac{3}{4}$ million tons of coal as compared with 1935, an increase of over 15 per cent. While the increased consumption of coal at home in 1936 may be partly accounted for by the Government's rearmament programme, it was doubtless also attributable in large part to the general trade recovery which manifested itself during the year.

Coastwise Coal Shipments.—Cargo shipments increased from $18\frac{1}{3}$ million tons in 1931 to nearly 22 million tons in 1935 and there was a further expansion to $23\frac{3}{4}$ million tons in 1936. The North East Coast and Scotland are the main districts interested in this trade. Shipments from ports in the former district increased from $10\frac{3}{4}$ million tons in 1931 to $14\frac{3}{5}$ million tons in 1936, while shipments from Scotland increased from $3\frac{3}{4}$ million tons to $4\frac{3}{5}$ million tons. In 1931, $11\frac{1}{5}$ million tons were delivered to Thames Ports (61 per cent. of total shipments); in 1936 the figure was $15\frac{1}{5}$ million tons (64 per cent. of total shipments).

There has been little variation in the quantity of coal shipped as bunkers.

Coal Prices. (a) At mine.—The average net selling value at the mine of all saleable coal raised, including mine consumption and miners' coal, was 14s. 0_4^4d . per ton as compared with 13s. per ton in 1935 and 13s. 7d. per ton in 1930. The improvement, as compared with 1935, was substantial in all districts, the smallest being in South Wales and Monmouth where it amounted to 5_4^3d . per ton. The biggest increase was in Scotland where it amounted to 1s. 4_4^3d . per ton, and in the remaining districts except Durham and Kent it was 1s. per ton or over; the increase in Durham was 10d. per ton, and in Kent, 7_4^3d . per ton.

The trend of British coal prices at the mine is compared below with the trend of values in the chief coal-producing countries for which information is available:—

		1930.	1932.	1933.	1934.	1935.
Great Britain		 100	97.6	95.8	94.7	95.7
Germany (excluding	Saar)	 100	$74 \cdot 9$	$71 \cdot 2$	69.8	69.6
France		 100	$78 \cdot 5$	$72 \cdot 5$	$70 \cdot 1$	69.0
Belgium		 100	69.5	61.8	$55 \cdot 2$	61.6
U.S.A.						
Anthracite		 100	$87 \cdot 4$	81.7	$83 \cdot 7$	78.9
Bituminous		 100	$77 \cdot 1$	$78 \cdot 2$	$102 \cdot 7$	$103 \cdot 7$
India		 100	86.9	79 · 4	$73 \cdot 4$	$72 \cdot 8$
Japan		 100	$82 \cdot 3$	97 · 7	$111 \cdot 2$	$116 \cdot 3$
Czechoslovakia		 100	96.8	90.0	$85 \cdot 2$	83 · 1
Union of South Afric	a	 100	96.3	94.9	$90 \cdot 2$	90.9

These results are based upon values in terms of national currencies and, taken on the whole, show a slight improvement in 1935 as compared with the previous year. Between 1930 and 1935 the price level in Continental countries has fallen by more than 30 per cent. while that of British coal fell by little more than 4 per cent. During the same period the value of American bituminous coal showed a slight increase but that of anthracite coal fell by more than 20 per cent.

In 1936 the average price at the mine of British coal showed an increase of nearly 8 per cent. over the average price in 1935 and of more than 3 per cent. over that in 1930. Particulars of prices in 1936 for foreign coal producing countries are not yet available.

(b) Export Coal Values.—The average declared value per ton, f.o.b. of British coal exported fell from 16s. 8d. in 1930 to 16s. 1d. in 1933 and 1934, since when it has steadily increased. In 1935 it was 16s. 4d. and in 1936 it rose to 17s., or 2 per cent. above the 1930 level. There are considerable variations in the price movement of the different kinds of coal; the demand for sized coals is indicated by the bigger increase in their price compared with other classes. For instance, sized anthracite has increased by 1s. 1d. per ton, while large anthracite was only 1d. per ton higher than in 1935; sized steam coal has increased by 1s. 5d. per ton, large steam coal by only 4d.; sized gas coal has risen by 7d. per ton while thro' and thro' gas coal has actually decreased by 1d. per ton.

British coal export prices since 1930 are compared below with the course of export values in terms of national currencies in certain countries abroad:—

		1930.	1933.	1934.	1935.	1936.
Great Britain	 	100	96.5	$96 \cdot 5$	98.0	$102 \cdot 0$
Germany*	 	100	54.8	47.7	45.6	45.2
Poland	 	100	68.3	59.6	$54 \cdot 9$	57.9
Netherlands	 	100	72.4	63.3	60.0	60.6
Belgium	 	100	76.7	69.9	77 · 7	$82 \cdot 3$
U.S.A.						
Anthracite	 	100	91.0	88.9	85.3	85.4
Bituminous	 	100	84.9	99.8	97 · 1	97 · 4

^{*} Including coal exports from the Saar since 18th February, 1935.

Since 1930 export prices abroad have fallen considerably while British prices have remained fairly stable. A slight improvement in 1936 was shown in the export prices in Great Britain, Poland and Belgium, but prices in other exporting countries remained almost stationary.

When making comparisons of British export prices with those of countries abroad, due regard should be paid to the revaluation

of sterling which took place in 1931.

German export prices, in terms of Reichmarks, have fallen by nearly 55 per cent. since 1930 and Polish prices by 42 per cent. in terms of Zlotys. Since 1934 the average f.o.b. value of German coal has been lower than the average pithead value of all coal raised in Germany.

Amalgamations.—Seven further schemes were completed during 1936 without recourse to the compulsory powers of the Railway and Canal Commission. Particulars of these schemes were given in the Ninth Report by the Board of Trade under section 12 of the Mining Industry Act, 1926, published in February, 1937, as Cmd. 5370. Since the passing of the Mining Industry Act, 1926, 56 schemes (reduced by subsequent amalgamations to 40) have been carried through, affecting 424 pits or levels employing about 249,200 workers on the date of the most recent amalgamation.

Employment.—The average number of persons employed during the year was 767,100, about 2,400 less than in 1935 and nearly 190,000 less than in 1929. The numbers declined during the first half of the year, but then an upward movement commenced and at the end of the year the figure was 771,200, 3,700 more than at the end of 1935. The number of manshifts worked per person employed was 262 or 6 more than in 1935.

On the average, the pits wound coal on 253 days or $6\frac{1}{2}$ days more than in 1935. The improvement was principally due to a continued reduction in time lost through want of trade which amounted to $33\frac{3}{4}$ days as compared with $63\frac{1}{4}$ days in 1932 and

 $32\frac{1}{3}$ days in 1929.

Taking into consideration the number of persons employed combined with the regularity of work, the total volume of employment was $2\frac{1}{2}$ per cent. greater than in 1935, approximately the same increase as in the output. As compared with 1929, however, the volume of employment has declined by 21 per cent., while the reduction in coal output has been $11\frac{1}{2}$ per cent.

Use of Machinery Below-ground.—Mechanical mining at coal mines in this country is still increasing. In 1936 the proportion of the total output cut by machines was 55 per cent. and 48 per cent. was mechanically conveyed; the comparable figures for 1935 were 51 per cent. and 43 per cent. respectively. Since 1928 the proportion of machine-cut coal has more than doubled and the proportion conveyed and loaded mechanically is now four times as great.

The total number of mines under the Coal Mines Act at work in 1936 was 2,080 and in 1935, 2,075. The number of mines at which coal-cutting machines were in use in 1936 was 864 as compared with 844 in 1935; the figures in respect of mechanical conveyors and loaders were 637 in 1936 and 592 in 1935. The number of machines has increased appreciably, particularly conveyors and loaders, and the quantity of coal dealt with per mine at those mines using machines was also greater than in 1935, the average quantity of coal cut per mine by machines being 145,400 tons as compared with 134,000 tons in 1935, and the average quantity per mine dealt with by mechanical conveyors and loaders 171,600 tons as compared with 161,500 tons in 1935.

Information as to the number of drills used for boring shot-holes was first collected in 1928 and the number gradually increased from 5,504 in that year to 6,857 in 1935. In 1936 an attempt was made to obtain information on a use basis, *i.e.*, the number of drills used for boring in coal and the number in rock, distinguishing those driven by electricity from those driven by compressed air. The nature of the questionnaire issued to the colliery owners has unfortunately resulted in some duplication of machines under the various headings and while there is reason to believe that there was some increase in the total number of drills in use during 1936 comparable figures with those for earlier years are not available. The form of return will be revised in 1937 so as to overcome this difficulty and it is hoped that the more detailed information will be available for publication.

The use of pneumatic picks, both for ripping and similar work, and for coal-getting, is progressing steadily year by year, and also the tonnage of coal dealt with by this means. In 1928 the number of pneumatic picks used for ripping and similar work was 1,318, for coal-getting 934, and the quantity of coal dealt with little more than 1 million tons; in 1935 the figures were 3,088, 5,524 and $9\frac{1}{2}$ million tons; and in the following year 3,450, 6,464 and $11\frac{3}{4}$

million tons.

Of the 6,464 pneumatic picks used in 1936 for getting down coal, 1,191 were used in conjunction with coal-cutting machines, an increase of 224 over the previous year.

The growth in the use of pneumatic picks, while progressive for the country as a whole, has, however, been chiefly confined to the Durham, Yorkshire, Lancashire and Cheshire and the South Wales and Monmouthshire districts, which accounted for 90 per cent. of all the coal dealt with by this means and for the same percentage of the total number of pneumatic picks used for all purposes.

The continued expansion during 1936 of mechanical conveying and loading below-ground at coal mines has already been mentioned and the changes which have taken place since 1930 were reviewed in last year's Annual Report. During 1936 there has been a further tendency towards the use of face and gate conveyors and a decline

in the proportion of coal dealt with by face conveyors only. The total tonnage mechanically conveyed increased from $95\frac{2}{5}$ million tons in 1935 to $109\frac{1}{3}$ million tons of which $67\frac{1}{3}$ million tons, or 62 per cent., were dealt with by face and gate conveyors and 42 million tons, or 38 per cent., by face conveyors only; the figures for 1935 were $54\frac{1}{5}$ million tons, or 57 per cent., and $41\frac{2}{5}$ million tons, or 43 per cent., respectively. There was thus a small increase in 1936 in the actual tonnage dealt with by face conveyors only, but a considerable decrease in its proportion of the total tonnage conveyed mechanically. The details for each year since 1930 are given in the following statement:—

		By Face Conveyors.		By Face and Gate Conveyors.		Pro-			
Year.	Direct With I Gate-end		Direct into Tubs.	With Loaders.	conveyed mechani- cally.	portion of Total Output.			
	1,000 Tons.								
1930 1931 1932 1933 1934 1935 1936	17,663 17,527 17,858 19,383 20,699 20,666 19,661	10,632 11,351 12,847 15,010 18,576 20,710 22,304	12,784 16,966 20,676 26,140 39,772 52,462 64,432	1,416 1,464 1,285 1,623 2,446 1,773 2,921	42,495 47,308 52,666 62,156 81,493 95,611 109,318	17 22 25 30 37 43 48			

2. Fuel Treatment and Utilisation.

Production of Oil Products from Coal and other Indigenous Materials.—The production of oil from coal and shale indigenous to this country, or from products derived therefrom, continued to receive a good deal of attention in 1936, and the information collected under the provisions of the British Hydrocarbon Oils Production Act, 1934, shows that the production of light oils from indigenous materials continued to increase. As regards the sources of supply there were material increases both in the quantity of coal carbonised at gas works (1.0 million tons) and in the proportion of gasworks at which benzole was extracted from the gas; the yield of benzole per ton of coal carbonised at those works was also higher. The greater activity in the iron and steel industries during the year was reflected in the considerable increase (2.6 million tons) in the quantity of coal carbonised at coke ovens with a consequential increase in the output of benzole. The production of petrol at the hydrogenation plant at Billingham also increased substantially in 1936 which was the first full calendar year of working.

Production of Light Oils.

The total production from indigenous materials of refined light oils coming within the statutory definition amounted in 1936 to 105.5 million gallons. Of this quantity about 92 million gallons were refined motor spirit, representing an increase of 70 per cent. over the quantity produced two years previously. The sources of supply and the production in the last three years are shown in the following table:—

	1934.	1935.	1936.
(i) Refined motor spirit (including motor benzole) (a) From coal, coal tar and tar oils: High Temperature Carbonisation: At Coke Ovens	$ \begin{array}{c} Mi \\ 24 \cdot 4 \\ 7 \cdot 4 \\ 0 \cdot 5 \\ 7 \cdot 4 \\ \hline 14 \cdot 3 \\ \hline 54 \cdot 0 \\ \hline 10 \cdot 1 \end{array} $	$ \begin{array}{c} 26 \cdot 2 \\ 8 \cdot 6 \\ 0 \cdot 7 \\ 9 \cdot 7 \\ 20 \cdot 8 \\ 10 \cdot 2 \\ \hline 76 \cdot 2 \\ \hline 13 \cdot 5 \end{array} $	30·1 10·0 0·8 11·1 33·3 6·7 92·0

The 13.5 million gallons of "other refined light oils" obtained in 1936, comprised 90's benzole, 90's toluole, xylole, solvent and heavy naphtha, pure toluene, pure xylene, and a small quantity

of other products.

The output of refined motor spirit obtained from the gas (and from tar where such was distilled) at coke-ovens increased in 1936 by 14.7 per cent. On the basis of coal carbonised those which extracted the benzole from the gas represented 97.9 per cent. of the total. The average yield of crude benzole thus obtained per ton of coal carbonised at coke ovens was 3.01 gallons compared

with 3.03 gallons in 1935.

The output of refined motor spirit obtained from the gas (and from tar where such was distilled) at gas works increased in 1936 by 15·3 per cent. as compared with 1935. On the basis of coal carbonised at gas works, those which took out the benzole from the gas represented 47·3 per cent. compared with 44·4 per cent. in 1935. The average yield of crude benzole thus obtained, per ton of coal carbonised at those works which extracted spirit increased from 2·16 gallons in 1935 to 2·24 gallons in 1936.

The tar and tar oils treated for recovery of benzole are supplied

from coke ovens and gas works.

The output of motor spirit (including naphtha) by the Scottish shale oil industry, again showed a reduction, the figure being nearly

 $6\frac{3}{4}$ million gallons compared with $10\frac{1}{5}$ in 1935 and $14\frac{1}{2}$ in 1934. As was pointed out in the last Report of the Secretary for Mines, owing to the increase in the duty from 1d. to 8d. per gallon on imported heavy oil used in road vehicles, there has been a considerable increase in the production of diesel oil from shale at the expense of motor spirit.

Production of Heavy Oils.

The information supplied voluntarily by those who were required to furnish particulars of the production of light oils shows that in 1936 about 103·4 million gallons of creosote and heavy oils were produced in this country from coal tars obtained from the carbonisation of coal and from the distillation of shale. This compares with 93 million gallons in 1935 and 90 million gallons in 1934.

Mechanical Coal Cleaning.—Once again it is possible to record a considerable increase in the quantity of coal dealt with in mechanical cleaning plants belonging to colliery undertakings. Although the actual number of cleaning plants in operation during 1936 shows little change when compared with the previous year, the total tonnage of coal dealt with was greater by $6\frac{1}{2}$ million tons. In 1936, $98\frac{1}{2}$ million tons of coal, or $43\cdot1$ per cent. of the total saleable output, were mechanically cleaned, as compared with 92 million tons, or $41\cdot4$ per cent. of the total saleable output in the previous year.

In some of the small districts there was a decrease in the quantity of coal cleaned, but most districts showed an appreciable increase not only in the actual quantity cleaned, but in the percentage of saleable output so treated. In the Midland and Durham districts, the increase amounted in each case to about 1½ million tons, and just over half the saleable output in Scotland was mechanically cleaned.

A small decrease in the number of washeries in operation has taken place during the year, but this is compensated for by an increase in the number of dry cleaning and flotation plants.

Of the various processes, however, washing continues to be the most popular; 83,289,140 tons, or 84.5 per cent. of the coal mechanically cleaned being dealt with at washeries, as compared with 15,016,272 tons, or 15.2 per cent., at dry cleaning plants.

Full particulars, showing for each district the quantities of saleable coal mechanically cleaned, are given in Table 8 of Appendix A.

Pulverised Fuel for Industrial Use.—Information has again been collected from consumers of pulverised fuel during 1936. The

following table shows consumption during the year 1929, when statistics were first made available, and for the past three years.

	1929.	1934.	1935.	1936.
For Steam Raising:		Tor	ns.	
(a) By Collieries(b) By Commercial Firms(c) By Authorised Elec-	229,304 525,843	551,469 589,644	572,971 669,056	589,184 745,497
trical Undertakers* For Heating Purposes: (a) In Metallurgical Fur-	714,513	1,629,086	1,883,542	2,216,000†
naces, etc	41,077	129,170	170,003	216,823
Kilns	1,244,421	1,602,422	1,753,315	1,958,066
Total	2,755,158	4,501,791	5,048,887	5,725,570

^{*} The particulars for Local Authorities relate to the year ended 31st March of the year following that shown.

The number of undertakings, apart from the cement industry, furnishing particulars in respect of the year 1929, and of the last three years, was as follows:—

	1929.	1934.	1935.	1936.
For Steam Raising:				
Colliery Companies	17	32	28	27
Other Commercial Firms	23	35	34	38
Authorised Electrical Undertakers	18	22	22	21
For Heating Purposes:				
Metallurgical Firms	17	78	96	111
Total	75	167	180	197

The consumption of pulverised fuel in 1936 reached nearly $5\frac{3}{4}$ million tons, an increase of 13 per cent. over 1935, and of 108 per cent. over 1929.

The continued growth in the use of pulverised fuel by the metallurgical industry for heating or reheating billets, etc., smelting and melting, annealing, and copper refining, is again notable, the increase being 28 per cent. over 1935. The following table

[†] Provisional figure.

shows the use of the fuel in the various sections of the industry:—

	1935.		1936.		
	Number of installations.	Quantity of Coal.	Number of installations.	Quantity of Coal	
Heating and Re-heating Billets, etc Smelting, including Melting Annealing Copper Refining	56 28 18 5	Tons. 91,403 40,631 25,719 12,250	64 31 17 7	Tons. 123,801 48,532 29,690 14,800 216,823	
Number of Firms	96		111		

Type and Size of Boiler.

The following table shows the quantities of pulverised fuel used for steam raising, according to the type and size of boiler:—

	Quantity of Coal consumed in 1936.				Total Quantity
Type and Size of Boiler.	At Col- lieries.	At Commercial Establish- ments.	At Authorised Electricity Under- takings.	Total 1936.	of Coal con- sumed in 1935.
Lancashire Scotch Marine Water Tube :	Tons. 116,699	Tons. 22,599 6,720	Tons.	Tons. 139,298 6,720	
Up to 15,000 lbs./hr. 15,001–30,000 ,, 30,001–50,000 ,, 50,001–75,000 ,, Over 75,000 ,,	3,123 161,097 308,265	30,133 81,047 59,674 14,161 531,163	7,442 12,533 138,515 2,057,510	33,256 249,586 380,472 152,676 2,588,673	249,897 357,824
Total Water-Tube Boilers	472,485	716,178	2,216,000	3,404,663	2,997,147
Total of all Boilers: 1936	589,184	745,497	2,216,000	3,550,681	-
1935	572,971	669,056	1,883,542		3,125,569

The above figures show that 96 per cent. of the total consumption of pulverised fuel for steam-raising takes place in water-tube boilers, and that 73 per cent. is consumed in such boilers of over 75,000 lbs.

per hour capacity.

Two central pulverising plants have been set up in the last year or two with the object of supplying pulverised fuel to small consumers who would not be justified in installing pulverising plant owing to the capital cost involved. About 1,500 tons of coal were supplied in pulverised form and in this connection it is interesting to record that during the year about 200 tons were used for central heating in three cinemas and about 140 tons in a large laundry in London for steam raising.

The fuel is delivered by road or rail in tank wagons from which it is discharged in the same manner as liquid fuel. It is also supplied packed in waterproof paper sacks to meet the requirements of very

small consumers or for experimental purposes.

Low Temperature Carbonisation.—In 1936, 15 low temperature carbonisation plants, working on a commercial or semi-commercial scale, were in operation as compared with 13 in 1935. One was a set of coke ovens operated at a temperature of about 730° C.

The following table shows the quantities of coal distilled at low temperature plants and the yields of products, for the years 1933-6.

	Unit.	1933.	1934.	1935.	1936.
			(i) Total (Quantities.	
Coal distilled Products:	Tons	317,703	284,242	327,112*	364,305*
Semi-coke	Tons	222,245	220,793	260,358	287,133
Tar	Gallons	4,899,820	4,693,832	5,298,404	6,339,786
Gas†	1,000 cu. ft.	2,112,195	1,479,900	1,658,006	2,043,016
Crude Spirit from Gas	Gallons	741,177	767,438	878,079	1,095,799
			r ton of coal ch carbonise	l throughput d coal only.	for
Semi-coke	Cwts.	14.0	15.5	15.9	15.8
Tar	Gallons	15.4	16.5	16.2	16.9
Gas	Therms	34 · 4	33.3	32.3	$31 \cdot 2$
Crude Spirit from gas‡	Gallons	2.68	2.89	2.93	2.94

^{*} In addition 6,736 tons of tar and oil were distilled in 1935, and 13,500 tons in 1936, at plants where mixtures of coal and oil or tar were processed.

† The yield of gas varies widely according to the process and the kind of coal treated.

[‡] Spirit is not "scrubbed" from the gas at all plants. These figures are related only to the plants where crude spirit was extracted from the gas produced.

At those plants which carbonised a mixture of pulverised coal and oil or tar, the following average yields per ton of mixture were obtained in 1936:— semi-coke $9\cdot 0$ cwts., gas $58\cdot 7$ therms, and motor spirit $4\cdot 73$ gallons. Four plants were operated by such "mixed" processes during the year, compared with two in 1935, and none in earlier years.

A total quantity of 364,305 tons of coal was carbonised in 1936, and in addition 19,490 tons of coal and 720 tons of coke were used for purposes other than processing, e.g., power, steam-raising, etc.

The amount of coal carbonised shows an increase of $11\cdot4$ per cent. over 1935 and 78 per cent. over 1930. The corresponding increased production of semi-coke was $10\cdot3$ per cent. over 1935 and 102 per cent. over 1930.

The Royal Air Force continued during the year to use a mixture containing a large proportion of low temperature spirit as an aviation spirit.

Hydrogenation.—The year under review was the first complete calendar year of working of the plant of Messrs. Imperial Chemical Industries, Limited, at Billingham, for the hydrogenation of coal, tar and creosote for the production of petrol. The plant was designed to produce a total of 150,000 tons (45,000,000 gallons) of petrol per annum, of which 100,000 tons was to be obtained from coal, 40,000 tons from creosote and 10,000 tons from low temperature tar. On the basis of these quantities, the coal requirements have been stated by the Company to be 500,000 tons for processing and for production of power and hydrogen in the case of the motor spirit made from coal, and 100,000 tons for power and hydrogen for processing the creosote and low temperature tar, a total of 600,000 tons per annum for the whole plant. The total quantity of coal used in 1936 was 425,000 tons of which 100,000 tons were directly hydrogenated and the remainder used for ancillary purposes, e.g., steam raising, power generation and hydrogen production. In addition to coal, substantial quantities of creosote and low temperature tar were hydrogenated during the year. The total production of petrol was about $33\frac{1}{3}$ million gallons.

Producer Gas for Motor Transport.—Increased interest in the possibilities of using Producer Gas for motor traction purposes has been displayed during the year.

The gas to be used is generated in a small producer plant attached to the vehicle, and is cleaned before being fed to the engine.

When Producer Gas is applied to a petrol engine with no modification an appreciable loss in power is apparent, but with increased compression ratio and improved leads for gas mixture

it is claimed that some 75 per cent. to 80 per cent. of the petrol power can be obtained. Increased cylinder volume where this is practicable will further improve output.

The work which has been done has included development of suitable equipment for generating and cleaning the gas, alterations to engine to secure the maximum efficiency and fuel tests to determine what is the range of suitable fuels which are obtainable in this country. Of the fuels which are available in quantity, anthracite and certain selected high and low temperature cokes appear to be the most satisfactory.

Among the advantages claimed for producer gas are savings in the costs of fuel and lubricating oil, the latter being due to the fact that it is stated that there is less contamination of the lubricant as compared with the petrol engine.

Use of Compressed Gas for Motor Transport.—The latest information available shows that 13 goods vehicles and 1 passenger vehicle are registered as being propelled, wholly or partly, by coal gas.

Use of Surplus Coke Oven Gas.—Details of the production and disposal of gas at coke ovens in this country during 1936 are given in Table 33 of Appendix A. The total quantity produced was 214,033 million cubic feet as compared with 185,558 million cubic feet in 1935. A large proportion of this was used by the coke ovens and associated undertakings. The quantity sold to gas undertakings increased from 20,474 million to 24,531 million cubic feet. The balance not accounted for amounted to some 3.5 per cent.

The South Yorkshire Gas Grid made considerable progress during the year and through the Sheffield Gas Company again achieved record sales, chiefly of industrial gas at low prices. The maximum quantities of coke oven gas contracted for proved inadequate to meet the increased demands made by industrial consumers, and, as a result, negotiations were commenced with a view to obtaining further supplies.

A new coking plant was connected with the grid system in 1936, and further extensions are contemplated during the current year. The total length of grid mains is now some 28 miles.

The report of the Departmental Committee set up by the President of the Board of Trade in October, 1935, to consider the possibility of co-ordinating the manufacture and distribution of gas in the West of Scotland was published in December, 1936.

The majority of the Committee came to the conclusion that the establishment of a Gas grid scheme over a wide area was not economically practicable at the present time, but recommended that the Glasgow, Coatbridge and Airdrie Gas undertakings should take supplies of coke oven gas.

3. PART I OF THE COAL MINES ACT, 1930.

(I) General.

A detailed review of the operation of the Schemes in force under Part I of the Coal Mines Act, 1930, since the March quarter, 1935, has already been published.* The following is a brief summary of the more important matters that arose during the year in connexion with the operation of the Schemes.

In last year's Report it was indicated (page 27) that an undertaking had been given on behalf of the coal mining industry that by the middle of 1936 an organisation for the complete and effective control of the sale of coal would be set up in each coal mining district, with central co-ordination. That undertaking was implemented during the year. The necessary Draft Orders were laid before Parliament and approved, and the detailed amendments of the Schemes in force under the Act were approved and became operative on the 1st August, 1936.

Three districts, Shropshire, South Staffordshire and the Forest of Dean, adopted complete Central Selling, on the lines of the Lancashire and Cheshire District Scheme, which had been in operation since the 1st July, 1935. Under this type of scheme, all the coal produced in the district, with certain unimportant exceptions, is sold, not by the individual owner, but by one organisation for the whole district.

Twelve of the districts adopted the type of scheme known as Central Control of Sales, under which the individual coal owner continues to sell his coal but is subject to control by a Sales Committee, which, through a permit system, prescribes the price below which he may not sell the coal, the tonnage that may be sold, the destination to which it may be sent, and other general conditions of sale.

In the Midland (Amalgamated) District, the system adopted was one of Central Selling by Groups, the activities of those Groups being co-ordinated by the Executive Board.

(2) Amendments of Schemes.

The introduction of Organised Selling involved substantial amendments in the Schemes. The other amendments made during the year may be summarised as follows:—

(a) Lancashire and Cheshire.—Amendments of the Scheme for this district were approved on the 25th June, 1936, to enable the

^{*} Report by the Board of Trade under Section 7 of the Act, on the Working of Schemes under Part I of the Act, since the March quarter, 1935. (Cmd. 5474.)

business of the Annual General Meeting to include both the re-election of the Executive Board and the review of the year's accounts.

A further amendment was approved on the 5th December, 1936, in connection with the accounting provisions of the Scheme and the adjustment of annual supply basic tonnages in relation to supplies to excluded works.

- (b) Warwickshire.—Amendments to the Scheme were approved on the 30th September, 1936, to provide for the formation of a Quota Tonnage Pool.
- (c) Northumberland.—On representations being made by the Northumberland District Executive Board that Sub-clause (iii) of Clause 64 of the District Scheme, dealing with the revision of export supply standard tonnages, was inequitable in its operation, an amendment to delete the sub-clause was approved on the 17th November, 1936.
- (d) Cannock Chase.—An amendment was approved on the 30th November, 1936, to provide for the determination of trade shares on a quarterly instead of on a monthly basis.

(3) Operation of the Selling Schemes.

This Report covers only five months' operation of the Selling-Schemes, and the greater part of that time was occupied in devising the district machinery. To a great extent the task of those responsible for carrying out the new policy was facilitated by the existence of a volume of long-term contracts which did not fall due for immediate renewal, and by the rising market for coal.

(4) Regulation of Output and Supply.

General.—The Central Council continued its policy of making initial allocations based generally on performance during the corresponding period of a previous year, leaving it to the districts during the course of the allocation period to justify supplementary allocations to meet a proved demand. Towards the end of the year there was great pressure for supplies, and the Central Council assured the Department that its policy in making allocations was to ensure that supplies of coal would be available to meet in full the demands of the markets.

Statistics of the total allocations for the year and the performance of the districts are given on page 24. Detailed particulars by quarters are given in Table 10 of Appendix A.

Output.—The total output allocations made by the Central Council during the year amounted to slightly more than $241\frac{1}{2}$ million tons. The total output during the year, as returned by the Executive

Statement Showing Total Allocations made by the Central Council and Output and Disposals of the Various Districts during the Year 1936.

		Odenot							
		Output.			Export Supply.			Intana Supply.	
District.	Total Allocation.	Output as returned by the Executive Boards to Central Council.	Percentage by which output fell short of allocation.	Total Allocation.	Disposals as returned by the Executive Boards to Central Council.	Percentage by which Export Disposals fell short of allocation.	Total Allocation.	Disposals as returned by the Executive Boards to Central Council.	Percentage by which Inland Disposals fell short of allocation.
	Toms.	Tons.	, °°	Tons.	Tons.	%	Tons.	Tons.	%
Northumberland	15,578,607	15,396,48/	0.97	4,740,578	4,553,406	3.93	9,3/8,4/4	9,221,154	1.68
and	1846.818	1 398 731	94.96	9,965,199	3,201,011	59.00	1 510 743	1 196 066	1.14
Lancashire and Cheshire	15,131,719	14.852.010	1.85	261.810	245 235	6.33	13 709 934	13 173 680	3.91
Midland Amalgamated	75,618,849	73,851,391	2.34	7,364,873	6,920,073	6.04	62,327,098	61.310.488	1.63
Shropshire	686,365	826,089	0.78	1	1	-	645,335	639,007	86.0
North Staffordshire and	7,330,797	7,264,714	06.0	111,750	88,791	20.54	6,429,546	6,330,565	1.54
Worcestershire	1,535,352	1,451,824	5.44	-	-	**************************************	1.361.449	1.279.920	5.99
Cannock Chase	5,412,079	5,308,393	1.92	1	1	-	5,107,148	4,962,624	2.83
Warwickshire	5,583,030	5,567,357	0.28		1	1	5,423,795	5,276,285	2.72
Forest of Dean	1,442,087	1,439,467	0.18	42,393	36,523	13.85	1,335,024	1,325,127	0.74
Bristol	157,840	105,646	33.07	1	1	1	134,756	86,407	35.88
Somerset	766,107	747,019	2.49	652	9	80.66	702,200	683,077	2.72
Kent	2,336,377	2,192,779	6.15	96,694	64,562	33.23	1,908,532	1.805,090	5.42
North Wales	3,076,789	2,976,054	3.27	172,062	117,686	31.60	2,524,067	2,460,495	2.52
South Wales and									
Monmouthshire	38,317,887	35,689,909	98.9	17,572,840	15,828,743	9.92	15,582,319	15,218,919	2.33
Scotland	32,801,767	32,032,300	2.35	7,277,968	6,730,765	7.52	23,279,283	22,762,652	2.22
GREAT BRITAIN	241,606,383	234,168,142	3.08	47,633,713	43,856,854	7.93	171,967,971	168,035,203	2.29

Free State, the Isle of Man and the Customary shipping places of the District as cargo into ships for conveyance therein to destinations outside the United Kingdom, the Irish Free State, the Isle of Man and the Channel Islands, or as fuel for use on ships proceeding to such destinations, or as fuel for use on fishing vessels or supply to works situated at ports to be used for the preparation of patient for export state for use on ships proceeding to other parts of an undertaking of which the coal mine forms part, but excluding supply for the information of persons who have been used in or about the mine and the dependents of persons who have been used in or about the mine and the dependents of persons who have been

Nork.-For detailed quarterly particulars see Table 10 of Appendix A. so employed.

Boards to the Central Council, amounted to nearly $234\frac{1}{4}$ million tons, falling short of the sum of allocations by $3\cdot08$ per cent.

Inland Supply.—The total inland supply allocations during the year amounted to 172 million tons. Inland disposals totalled 168 million tons, falling short of the sum of allocations by $2\cdot 29$ per cent. In the previous year, disposals totalling just over $158\frac{1}{2}$ million tons were $2\cdot 41$ per cent. below the sum of allocations for the year.

Export Supply.—The total export supply allocations during the year slightly exceeded $47\frac{1}{2}$ million tons. Export disposals totalled just over $43\frac{3}{4}$ million tons, falling short of the sum of allocations by 7.93 per cent. The export supply disposals in 1935 amounted to over $48\frac{3}{4}$ million tons and were 8.34 per cent. below the sum of the allocations for the year.

The initial export supply allocations for the March, June and December quarters were fixed at lower levels than in the corresponding quarters of the previous year. For the September quarter, the initial allocations were equal to those of the September quarter of 1935. During the first three quarters of the year applications for supplementary export supply allocations were few in number and the total tonnage involved comparatively small. But in the December quarter additional quantities, amounting to about 1½ million tons, were allocated in order to meet the marked increase in export demand.

(5) Committees of Investigation.

- (a) Before the Selling Schemes were approved, representations were received jointly from the Conjoint Conference of Public Utility Undertakings and the Central Council of Colliery Owners regarding the constitution of the Committees of Investigation set up under Section 5 of the Act. Agreement was reached that the Independent Chairman of the Committees should be members of the legal profession, and that in the event of the members of a Committee of Investigation not being unanimous on any question, the Independent Chairman of the Committee should take the decision on behalf of the Committee. In addition, it was agreed that in respect of any complaint made to a Committee regarding any act or omission of any persons in respect of their functions under a statutory Scheme, the decision of the Committee should forthwith be binding on all parties. The necessary changes in the personnel of the Chairmen of the Committees were made before the Schemes came into operation. It was not possible during the year to introduce the legislation required to make the other changes.
- (b) In the Report on the working of the Schemes previously referred to, the operation of the Committees of Investigation is

discussed at some length. During 1936 twenty-two complaints were lodged with the Committees as follows:—

Midland (Amalgamated)		 	7
Durham		 	2
Lancashire and Cheshire		 	3
Scotland		 	2
Cannock Chase		 	2
North Staffs		 	1
South Staffs		 	1
South Wales and Monmouth	•.•	 	3.
Warwickshire		 	1

The majority of these complaints were lodged after the 1st August, when organised Selling became operative.

By the end of the year six of these complaints had been withdrawn and one was being held in abeyance at the request of the complainants.

Investigations were completed in seven cases. The Committees decided to make no recommendation in respect of six complaints. The remaining case was a complaint lodged by the Dawdon Lodge of the Durham Miners' Association with the Durham District Committee of Investigation that the classification and/or minimum prices under the Durham District Coal Mines Scheme, 1930, in their application to the coals produced at the Dawdon Mine were unfair, inequitable, and contrary to the public interest. The Committee were of opinion that the difference between the minimum prices of "Wear Special" Gas Coal and those of the lower-priced gas coals was too great, and made representations to the Durham Executive Board that such difference should be lessened. The introduction of organised Selling to a large extent changed the situation, but action was taken by the Executive Board which met the recommendation of the Committee in part.

The investigation of the remaining eight cases had not been completed by the end of the year.

4. Wages and Profits.

The principal feature during 1936 was the considerable increase in wages payable during the year. As will be seen from the figures on page 31, the average earnings per shift were 9d. higher than in 1935. This was mainly due to the operation of the flat rate increases which became payable as from the 1st January, 1936, and the events which led up to the decision of the coalowners to pay these increases were briefly as follows.

For some time the Mineworkers' Federation of Great Britain had been endeavouring to secure negotiating machinery on a national basis. During the second half of 1935 they decided, without abandoning their efforts in this direction, to concentrate on a campaign for increased wages, and this campaign received considerable support from all sections of the public. The Govern-

ment's attitude towards the Federation's representations was stated early in July when it was announced that they would welcome the setting up of national machinery in the industry if this were done by mutual consent between the two parties concerned, and that they were not prepared to introduce legislation to increase wages irrespective of the economic circumstances of the industry. During the autumn the Mineworkers' Federation put forward requests through the Secretary for Mines for direct discussions on wages with the Mining Association, but it was not found possible to arrange such discussions, and the Mineworkers' National Delegate Conference. held on the 17th October, 1935, passed a resolution recommending that a ballot vote be taken in the coalfields in support of their campaign for increased wages. It was evident to all parties concerned that no considerable increase of wages was practicable without an increase in the proceeds of the industry and, as a result of negotiations between the Secretary for Mines and the Mining Association, a specific undertaking was given to the Government by the Mining Association that selling schemes with central coordination would be set up in all districts as soon as possible. The financial improvement which might be expected from this action would naturally not be operative for some time, and, in the circumstances, the Mineworkers' Federation held a ballot of the coalfields in November which showed a considerable majority in favour of strike action to secure increased wages. Consideration was then given to the question of how an immediate increase in prices could best be obtained. On the 17th December, 1935, representatives of the Mining Association met representatives of the Mineworkers' Federation and informed them of their efforts to secure such immediate increases, and stated that in every district an increase in wages would take place as from the 1st January, 1936. There was, however, no indication as to the extent of these increases and no certainty that they would be on a uniform basis, and the Mineworkers' Delegate Conference on the 19th December decided to hand in notices to expire on the 27th January unless wage proposals satisfactory to the Executive Committee were obtained in the meantime. Meanwhile the colliery owners were endeavouring to obtain voluntary increases on contract prices, and they gave an undertaking that the whole of the amounts realised by such voluntary increases would be paid in increased wages to the workmen. At a meeting on the 8th January between representatives of the colliery owners and the Mineworkers' Federation, offers of specific increases in all districts were made and the next day, at a further meeting between the two parties, the owners gave an assurance that they would reconsider these figures and would recommend the districts to agree to the establishment of a National Joint Consultative Committee of representatives of owners and men. In view of this assurance the decision to tender notices was postponed for a fortnight, and at a further meeting on the 23rd January, final offers

of specific district increases were put forward. In addition, the owners announced that they were prepared to co-operate with the Federation in setting up a Joint Standing Consultative Committee for the consideration of all questions of common interest and of general application to the industry, not excluding those applicable to the determination of wages by District Agreements. These proposals were accepted by the Mineworkers' Federation as a basis of settlement, and notices were withdrawn. The table below shows the flat rate increases which thus became payable as from January 1st, 1936.

Flat Rate Increases in Wages payable as from 1st January, 1936.

	Per	shift	
District	Adults.	Boys.	Notes.
Scotland	s. d. 0 9 0 6 0 6 0 6 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	d. 4½ A 3 A 3 A 6 B 6 B 6 B 6 A 4 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 7 B 8 B 8 B 8 B 8 B 8 B 8 B 8 B 8 B 8 B 8	Surface workers under 22, 6d. Females 6d. Merged into minimum percentage from April, 1936. Workers over 18 at the coal face, 9d. Surface workers 6d. and 3d. ———————————————————————————————————
Kent Bristol	0 5 0 4	2½ See Notes.	sistence wage to 8s. 1d. Boys at Coalpit Heath under 17, 2d. Boys at East Bristol under 21, 2d.

A. Boys under 18.

B. Boys under 21.

During the year the total amount of the special increase in wages resulting from this agreement was £6,091,000, while the amount received by the coalowners from voluntary increases on contract prices was £2,128,000.

The part played by the Government during the above negotiations was that of an intermediary, but the Government's coal policy, announced at the opening of that session of Parliament, which included in addition to the unification of royalties and the establishment of a Royal Commission on Safety in Mines, steps to secure co-ordination of the selling of coal, through statutory schemes under Part I, of the Coal Mines Act, 1930, had a bearing on the negotiations, since it was the decision to introduce central selling which enabled the owners to offer increases of wages in the future.

Reference has already been made above to the flat rate increases in wages which became payable as from the 1st January, 1936. In most districts these increases were payable over and above the results yielded by the ascertainments, though, in Nottinghamshire, the flat rate increases were merged into the percentages payable, with the result that the percentages paid in this coalfield from April onwards were considerably higher than the minimum of 38 per cent. In many other districts, however, the ascertainments permitted the payment of wages at a percentage higher than the minimum. This occurred in the following cases:—

	Notting- hamshire.	South Derby.	Leicester- shire.	Cannock Chase.	Warwick- shire.	North Stafford- shire.	Forest of Dean.	Somerset (Radstock)
	38	Min 29	imum pe 32	ercentage 40	43	39	68.75	31.50
January February March April. May June July August September October November December	60·53 56·87 51·45 46·23 46·04 42·10 43·16 49·62 53·91	32·77 36·23 34·84	Percent	age paid 41.05 48.15 50.66 48.55 46.22	. 46 48 50 53 55 56 56 57 59 60 61 60	41 & 43 41 & 43 42 & 44 41 & 43 ————————————————————————————————————	74·22 71·27 69·37 ————————————————————————————————————	36·50 36·50 36·50 36·50 36·50 36·50

The position as shown by the above table compares very favourably with the position in 1935, when wages above the minimum were only paid in two districts—in Cannock Chase for one month, and in Warwickshire for eleven months.

In certain other districts the wages ascertainments at times yielded percentages above the minimum, but the arrangements for the recoupment of deficiencies carried forward from previous periods did not permit an increase in the percentage payable. The following table shows that in 33 cases during 1936 the ascertainments yielded percentages higher than the minimum though, in fact, wages were paid at the minimum:—

	Scotland	Yorkshire	North Derbyshire	Leicester- shire	Cannock Chase	Lancashire and Cheshire	North Stafford- shire	South Stafford- shire
		N	Iinimum	percenta	.ge.			
	100	32	38	32	40	32	39	38
		Asc	certainm	ent perce	entage.		·	
January February March April. May June. July August September October November December	103·01 118·34 124·21 121·91 117·25 109·04 101·13 — 100·18 109·83 112·65	$34 \cdot 22$ $41 \cdot 63$ $34 \cdot 01$	42·88 54·98 57·17 55·27 47·19	33·48 34·63 35·77 ———————————————————————————————————	46.77	34·40 43·52 43·61 44·44 36·90 34·12	43.20	53·26 53·26 53·26

Supplemental agreements embodying the flat rate increases were signed in many districts during 1936, and in North Staffordshire an increase of the minimum percentage from 37 to 39 became operative at the beginning of the year, while in Somerset an increase of the percentage from 31.5 to 36.5 took place in August.

The usual financial statistics for the year are shown on page 31. The average earnings per shift were 9d. higher than in 1935 and $10\frac{1}{2}d$. higher than in 1934. All districts showed an increase in the average earnings per shift. The largest increases over the 1935 figures were recorded in South Midlands; Lancashire, Cheshire and North Staffordshire; Yorkshire; and North Midlands.

The output of coal per manshift increased, taking the country as a whole, but to a lesser extent than in recent years, the average being about $23\frac{1}{2}$ cwts., or one-fifth cwt. more than in 1935. There was an increase of between one-third and one-half cwt. in South Midlands; North Midlands; South Wales and Monmouthshire; Lancashire, Cheshire and North Staffordshire; and the smaller districts; there was, however, a decrease of over one-half cwt. in Scotland and slight decreases in Northumberland and Durham.

Average Proceeds, Earnings and Profit (or Loss) in the Coal Mining Industry during 1936.

					3.					
H	ash *	911.0	0 10	10	0	-		0	-	1
ed be	Average Cash Earnings.*	s. 9 10 10	0 19	13	∞	S		10	4	000
on employ Annum.	Aver	146 120 116 116	126	129	137	137		136	131	118
Per Person employed per Annum.	Average Number of Manshifts worked.	307 284 271	260	228	250	264		284	262	256
Per Manshift Worked.	Average Cash Earnings (all classes of Workpeople).*	S. 6. 8 8 9. 7 5.8 8.	9 8	11 43	$11 0\frac{4}{4}$	10 41		9 74	10 04	9
Per Manshi	Output of Saleable Coal.	cwts. 24.64 23.58 22.03	20.82 26.58	28.53	23.41	20.72		20.04	23.54	23.35
-	Percentage of Wages Costs to Net Proceeds.	85.7 93.6 99.0	100.4	81.5	84.0	6.68		93.5	90.5	94.3
	Profit (+) or Loss (-).	s. d. + 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	+ 1 1 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1	+ 1 111	+ 1 114	+ 1 23		+ 0 83	+ 0 11½	+ 0 61
rcially.	Wages Costs.	s. d. 77 8 443. 8 8 9 443.	$\begin{array}{ccc} 10 & 0 \\ 9 & 1\frac{1}{2} \end{array}$	8 71	10 13	10 111		10 5	9 2	8 64
Per ton disposable commercially.	Net Proceeds.	s. d. 9 991 8 8 1	9 11½ 10 3	10 63	12 1	12 24		11 13	$10 1 \frac{1}{2}$	9 03
Per ton d	Costs other than Wages.	$s. d.$ $4 0\frac{1}{2}$ $4 7$ $4 11$	5 94 0 022 4 0 43	$3 10\frac{1}{2}$	4.	5 24		4 8 2 2	4 7	4 6
	Gross Proceeds.	s. d. 13 10 12 8 13 3	15 9 14 3 ³ / ₄	14 54	16 3	17 41		15 104	14 8½	13 63
	District.	Scotland Northumberland	Monmouthshire†	North Derbyshire & Nottinghamshire South Derbyshire,	Leicestershire, Cannock Chase & Warwickshire Lancashire, Cheshire	and North Staf- fordshire Cumberland, North	Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean,	Somersetshire and Kent	Average for all Districts	Average for all Districts (1935)

* Tables 22 and 23 of Appendix A show the average value of allowances in kind which are excluded above. † The particulars for this district relate to February, 1936, to January, 1937 (inclusive).

does not take account of such capital expenditure as loan interest and amortisation charges. For further particulars see Table 24 of Note.—Costs other than wages relate only to expenditure incurred on revenue account. The profit (or loss) shown above, therefore, Appendix A. There was an improvement in regularity of employment, the average number of shifts per man being six more than in 1935 and nine more than in 1934. All districts except South Wales and Monmouthshire showed an increase in the number of shifts worked per person, the largest increases being 13 in South Midlands, 11 in Yorkshire and 9 in North Midlands.

Annual cash earnings were £12 16s. higher on the average than in 1935 and £15 13s. higher than in 1934. Increases in annual earnings as compared with 1935 of nearly £22 were recorded in the South Midlands and of over £17 in Yorkshire, Lancashire, Cheshire and North Staffordshire. Except in South Wales and Monmouthshire, no district showed an increase of less than £10.

Gross proceeds showed an increase of 1s. $1\frac{3}{4}d$. per ton over the 1935 figures, all districts recording an appreciable increase ranging from $6\frac{1}{4}d$. per ton in South Wales and Monmouthshire to 1s. $6\frac{3}{4}d$. per ton in the South Midlands.

Costs other than wages were 1d. per ton higher on the average than in 1935 so that the average net proceeds for the country as a whole were 1s. $0\frac{3}{4}d$. higher than in 1935. An increase in wages costs was shown in all districts, the average increase being $7\frac{1}{2}d$. per ton.

The profit and loss figure showed a credit balance in all districts except South Wales and Monmouthshire, where the debit was $\frac{1}{2}d$. per ton as compared with 1d. in the previous year. In Durham, where there was a debit of $3\frac{1}{2}d$. per ton in 1935, a profit of 1d. was shown in 1936. An increase of $9\frac{3}{4}d$. was recorded in the North Midlands and an average improvement of $5\frac{1}{4}d$. over the whole country.

5. THE MINERS' WELFARE FUND.

This Fund, of which a full account has been published in the Annual Report* of the Miners' Welfare Committee for 1936, was established in 1920 for purposes connected with the social well-being, recreation and conditions of living of workers in or about coal mines, and with mining education and research.

The allocation of the Fund devolves upon the Miners' Welfare Committee, appointed by the Secretary for Mines. The membership of the Committee, which is given in Appendix B, remained unchanged during 1936, excepting for the appointment in August of Mr. Joseph Jones, President of the Mineworkers' Federation of Great Britain, in place of Mr. Ebby Edwards. Upon the retirement of Dr. J. Pearse from the Ministry of Health, the Minister appointed Dr. A. E. Quine as assessor in his place.

The receipts of the Fund, which by the end of 1936 had reached the figure of £15,976,342, are derived chiefly from two sources, an

^{*} Miners' Welfare Fund. Fifteenth Annual Report, 1936. H.M Stationery Office, Price 1s. 6d. net.

output levy at the rate of $\frac{1}{2}$ d. a ton of coal produced, and a royalties levy at the rate of 1s. in the £1 on mining royalties. In addition, there is an income from interest on investments representing balances of the Fund awaiting disbursement and from profits on investments realised.

The first table below indicates the receipts from these three sources in 1936, and for the whole period from 1921 to 1936, together with the appropriations to the three separate accounts into which

			Appropriations	s
Receipts.		To Baths Fund.	To Districts Fund.	To General Fund.
£	In 1936	£	£	£
463,350	Output Levy— (a) Appropriated under the Act of 1934 £179,546 (b) Divided between the Districts and Gen-	159,546	_	20,000 (for research)
	eral Funds£283,804		227,043 (four-fifths)	56,761 (one-fifth)
184,000 81,875	Royalties Levy Interest, etc	184,000 31,454	36,513	13,908
729,225 100%	Total Total per cent	375,000 51 · 4 %	263,556 36·2%	90,669 12·4%
12,678,359 1,914,000 1,383,983 15,976,342	From 1920 to 1936 Output Levy, 1920–36 Royalties Levy, 1926–36 Interest, etc., 1920–36 Total	976,358* 1,914,000 798,864† 3,689,222	9,682,336 	2,019,665* 168,807† 2,188,472

^{*} Includes or excludes £460,920 transferred from the General Fund to the Baths Fund during the years 1927 to 1933.

† Includes or excludes £507,743 transferred from the Districts and General Funds to the Baths Fund during the years 1927 to 1933.

	Grants Allocated.	Grants Paid.
Total at 31st December, 1935 During 1936 (net amount) Total at 31st December, 1936 Excess of receipts over payments Net balance available for allocation	 14,635,917 924,233 15,560,150 416,192 15,976,342	13,387,602 803,004 14,190,606 1,785,736 — 15,976,342

the Fund is divided, the Baths Fund, the Districts Fund and the General Fund. In 1936 the receipts from the output levy were £20,003 less, and those from the royalties levy £8,000 more, than in 1935. Allowing for a small increase in receipts from interest, etc., the net receipts for the year showed a decrease of £7,363.

The second table on page 33 shows the position during and at the end of 1936 as regards the allocation and disbursement of the Fund. The grants allocated during the year amounted to £924,233, namely, £195,008 in excess of the receipts, £729,225, for the year. At the end of the year there was only £416,192 awaiting allocation.

The Baths Fund.—Under the Mining Industry (Welfare Fund) Act, 1934, this Fund is credited each year with the whole of the receipts from the royalties levy and such sum from the receipts of the output levy as will, with the receipts from interest, etc., bring the revenue of the Baths Fund for the year up to £375,000. The total receipts of the Baths Fund since its institution, when the royalties levy was imposed by the Mining Industry Act, 1926, had at the 31st December, 1936, amounted to £3,689,222, the whole of which sum, and an additional sum of £87,088 from future receipts, had been allocated.

The grants allocated from the Baths Fund are to defray the cost of pithead baths installations built by the Miners' Welfare Committee through their architectural staff.

At the end of 1936, 216 baths installations were open providing accommodation for 261,272 men and 366 women. Of these, the Miners' Welfare Committee had built 184 (16 of them in 1936) accommodating 237,450 men and 366 women, and the others had been built by Colliery Owners at the cost of the Districts Welfare Fund or at their own cost. In addition, the Miners' Welfare Committee had 41 installations in course of construction at the end of 1936 with accommodation for 67,632 men and 322 women, which was an increase of 15 installations, for 27,786 men and 150 women, as compared with a year earlier.

Baths Fund.		Grants Allocated.	Grants Paid.
Total at 31st December, 1935 During 1936 (net amount) Total at 31st December, 1936 Excess of receipts over payments Excess amount allocated	 	3,277,458 498,852 3,776,310 87,088 3,689,222	2,655,952 333,365 2,989,317 699,905 3,689,222

Notwithstanding the steady progress in building baths and the prompt allocation of the money credited to the Baths Fund, the demands for baths now exceed considerably the rate of supply. This led the Miners' Welfare Committee, early in 1936, to examine the situation anew, and as a result they concluded that the circumstances were such as to warrant them in departing from their practice of limiting allocations from the Baths Fund according to the credits for the time being. They decided, therefore, to make additional allocations against future credits, until the sums actually paid out against the allocations correspond more closely with the amount of the credits, leaving only the minimum necessary for a working balance. It was calculated that by this means allocations might be made in 1937 and 1938 to the value of £625,000 a year instead of the statutory £375,000 a year, and preparations to that end were put in hand at once.

When this decision was announced to the Annual Miners' Welfare Conference in November, disappointment was expressed that the rate of expenditure could not, on the present financial basis, be continued after 1938. In reporting this to the Secretary for Mines, the Miners' Welfare Committee estimated that, if allocations could be maintained at the rate of £625,000 a year, they would probably suffice to meet all the requirements for baths in eight years, except for small collieries, those with very short lives, and those where baths are not wanted or cannot be built owing to technical difficulties.

The average cost (excluding canteens) of the 237 pit-head baths installations which had been completed or put out to tender by the end of 1936 was £11 17s. per person accommodated, and varied from £9 2s. for installations accommodating more than 2,500 persons to £17 4s. for those accommodating 400 or fewer persons. Building costs increased during the latter part of 1936, and in view of prevailing industrial conditions, a further increase must be anticipated in 1937.

The popularity of the existing baths continues to grow. Those in respect of which returns were received in 1936 were used on the average by 92 per cent. of all the workers employed, including the surface workers. This figure compares with 90 per cent. the previous year and 83 per cent. five years earlier. The average for new installations in their first year of working was 96 per cent.

First-aid rooms for the treatment of minor injuries have always been included in the installations built by the Miners' Welfare Committee.

Since the Act of 1934 canteens have been provided out of the Baths Fund at new baths installations when required. Up to the end of 1936 allocations had been made for 46. In addition, canteens had been or were being provided out of the Districts Fund at 83 older installations. The baths schemes which included canteens therefore numbered 129 altogether.

Further facilities which have been provided in some installations, although not at the cost of the Baths Fund, include cycle stores, boot

repair shops and artificial sunlight clinics.

The building of baths has latterly been used sometimes by the Miners' Welfare Committee as an opportunity for suggesting to Mining Companies improvements in the appearance and lay-out of the colliery premises. Excellent results in this direction have been achieved in many instances by careful consideration of the design and setting of the baths, and through the voluntary efforts of the colliery owners and officials.

Districts Fund.—The receipts of the Districts Fund in 1936 amounted to £263,556, i.e., $36 \cdot 2$ per cent. of the total receipts of the Welfare Fund. This sum was as usual divided amongst the 25 Coalfield Districts, each District being credited with receipts from the output levy in proportion to the sums contributed in the District, and with receipts from interest, etc., in proportion to the District's

balance for the time being.

The total receipts of the Districts Fund from its institution in 1921 to the end of 1936 amounted to £10,098,648, of which all but £426,381 had been allocated for specific purposes. This unallocated balance, when distributed amongst the 25 Districts is seldom significant in amount and, in any event, much of it has been provisionally assigned to projected welfare schemes which cannot be brought to fruition until additional sums become available. As grants are not paid until the money is required for immediate use or for work already done, the total sum paid is necessarily less than that allocated.

The amount and the chief purposes of the grants allocated from the Districts Fund are as follows:—

Districts Fund.		1936.	1921 to 1936.
Grants allocated :—		 £	f.
For Recreation		 167,488	5,304,228
,, Health		 84,259	3,407,564
,, Pithead Baths		 49,097	472,084
,, Other Pit Welfare		 38,518	147,720
,, Education		 8,532	126,050
,, Miscellaneous		 15,000	75,413
" Administration Expenses .		 11,888	139,208
		374,782	
Less Reductions of earlier gr	ants	 5,735	
Net total allocated		 369,047	9,672,267
Balance available for allocation .		 	426,381
Receipts		 263,556	10,098,648
Grants paid		 350,528	9,324,612
Excess of receipts over payments.		 Dr. 86,972	774,036

Grants under the heading of recreation include sums to be expended upon providing workmen's institutes, halls for dances, dramatic performances, lectures and indoor games, grounds for outdoor sports of all kinds, parks and children's playgrounds, boys' clubs and camps and swimming pools. Of the £167,488 devoted to recreation in 1936, £87,530 was for recreation grounds, including children's playgrounds, and £71,486 was for institutes and halls; together these two items accounted for 95 per cent. of the total.

Grants for pithead baths were made in a few Districts where the District Committees desired to supplement their proportions of the Baths Fund so as to get their collieries equipped earlier. Grants for other pit welfare purposes were mainly for canteens (£10,068) and cycle stores (£24,299).

The health purposes receiving grants included convalescent treatment by providing homes or ticket funds (£31,431), which up to the end of 1936 had absorbed 79 per cent. of all grants for health purposes, hospital treatment (£33,788), ambulance services, special

medical treatment and appliances and nursing services.

Of the sum of £8,532 devoted to education in 1936, £5,672 was for scholarships and grants to students, £1,443 of that sum being for mining education only. Non-vocational lectures accounted for a further £1,110 and other grants were made for safety instruction and for buildings and equipment for mining instruction.

The sum of £15,000 shown under the heading "Miscellaneous" was for aged miners' homes in Durham and Northumberland. Administration expenses of the District Welfare Committees

accounted for £11,888.

There was further evidence during the year that the Central Committee was justified in its policy of appointing District Organisers to assist the District Committees, their salaries being charged to the General Fund. In the twelve districts provided with Organisers in this way, welfare expenditure has given better value and welfare work has reached improved standards. Particularly is this so in regard to maintenance, a problem in which the advice and experience of an Organiser may be of great assistance. Noteworthy activities of Organisers during the year included a detailed survey of the whole field of welfare in the Kent coalfield, a survey of nursing services in Warwickshire, an investigation of the condition of all bowling greens at miners' welfare schemes in Northumberland, and a scheme in the Fife and Clackmannan District to collect welfare contributions from the workmen by means of a general levy at every colliery, to be paid into a central pool and distributed proportionally to the institutes towards their upkeep.

The Central Committee has continued to provide free technical advice on the construction and maintenance of bowling greens and hard tennis courts, *inter alia*, and has prepared a short pamphlet on bowling greens for the use of the groundsmen and local committees.

General Fund.—The receipts of the General Fund in 1936 amounted to £90,669, comprising £76,761 from the output levy and

£13,908 from interest and profits on investments.

The grants allocated amounted to £73,994, but some of the earlier grants were reduced, with the result that the net amount of the allocations was £56,334. The reductions were chiefly due to the abandonment of portions of the projected schemes for establishing senior centres in mining instruction in Durham and Northumberland. New grants for buildings or equipment for mining instruction at other centres were, however, made to the total of £4,956.

The other grants in 1936 consisted chiefly of £44,996 for researches under the Safety in Mines Research Board into problems affecting the safety and health of mine-workers, and £23,179 for the Miners' Welfare Committee's expenses of administration and their archi-

tectural and general building expenses.

The financial position of the General Fund at the end of 1936 may be summarised as follows:—

General Fund.	1936.	1921 to 1936.
Grants allocated:— For Education	5,554 44,996 265 — 23,179	£ 1,040,155 937,005
Less Reductions of earlier grants	73,994 17,660	
Net total allocated Balance available for allocation	56,334	2,111,573 76,899
Receipts	90,669	2,188,472
Grants paid	119,111 Dr. 28,442	1,876,677 311,795

Miners' Welfare National Scholarship and Students' Exhibition Schemes.

A full report of these Schemes in 1936 has been published as part of the Annual Report on the Miners' Welfare Fund (see Note *

page 32.)

The income from the Scholarship Scheme Endowment Fund in 1936, as in 1935, amounted to about £8,000, of which approximately 95 per cent. was disbursed in scholarships. Of the 497 applicants, 19 per cent. were mine-workers and 81 per cent. children of mine-

workers. Fifteen scholarships were awarded, seven to mine-workers and eight to children of mine-workers. At the end of 1936, 42 scholarships were being maintained.

The total number of scholarships awarded during the ten years in which the scheme has been in operation is 139, of which 62 were

for mine-workers and 77 for children of mine-workers.

The Students' Exhibition Scheme was established in 1936 by means of an endowment of £25,000 from the Miners' Welfare Fund (General Fund), the income (about £880 per annum) to be applied in providing exhibitions for meritorious but unsuccessful candidates for Miners' Welfare Scholarships, with the proviso that awards need not be limited to university degree courses. Nineteen exhibitions were awarded in 1936, two for mine-workers and 17 for children of mine-workers.

PART II

OTHER MINING AND QUARRYING INDUSTRIES IN 1936*

The following table shows the total net selling value of the minerals raised and the approximate number of persons employed in 1936 grouped roughly according to the class of mineral concerned:—

Group.	Total Net Selling Value of Output.	Percentage of Total Value.	Approximate Number of Persons Employed.
1. Iron Ore and Ironstone 2. Non-Ferrous ores 3. Minerals (other than metalliferous ores) used mainly in	2,838,000 850,000	% 12 4	8,800 3,500
iron and steel-making and other smelting processes 4. Minerals used mainly for china, pottery and glass manufac-	1,703,000	7	8,700
ture	1,230,000	5	4,400
cement, concrete, etc 6. Other minerals	14,258,000 2,168,000	62 10	66,800 7,100

As will be seen from the above table, this part of the Report deals with minerals related to many branches of industry. recovery from the depression of 1931/2, which was noted in the last Report, continues. In the aggregate, output amounted to 106 million tons with a net selling value of £23,047,000 in 1936, which compares with 96 million tons and £21,044,000 in 1935, increases of 11 and 10 per cent. respectively. The average number of persons employed in 1936 was 99,300 as compared with 95,500, an increase of 4 per cent. Since 1929, there has been a considerable increase in efficiency of production. In that year output was 77 million tons valued at £23,267,000, the average number of persons employed being 112,800. Output has therefore increased by 29 million tons, or 37 per cent., while the average number of persons employed declined by 13,500, or 12 per cent. During the same period the number of days worked per wage-earner per annum is estimated to have increased by only 5 per cent.

It will, therefore, be seen that economies in labour have been effected since that year. It should further be noted that the largest

^{*} Except for metalliferous minerals and a few others of special importance, this survey does not cover the produce of quarries which are less than 20 feet deep. The chief products of such quarries are clay, gravel and sand. Nor are sand and gravel raised from river beds and foreshores included. The output of mineral from these sources is fairly substantial.

increases have occurred in the production of chalk, clay and shale, and gravel and sand, the total outputs of which increased by 39, 72 and 187 per cent. respectively, or by 91 per cent. as a whole since 1929. These minerals are easily won so that while their proportion of the total output is substantial (49 per cent.) their share of employment is much smaller (20 per cent.).

GROUP 1.—IRON ORE AND IRONSTONE.

The total output of iron ore and ironstone used for ironmaking amounted to 12,701,000 tons in 1936 which, with the exception of 1929, was the highest figure since the War. It represents an increase of 1,806,000 tons over the output of 10,895,000 tons in 1935. The average net selling value at mines and quarries rose from 4s. 4d. per ton in 1935 to 4s. 6d. per ton in 1936. The average value of Jurassic Ironstone which represents 90 per cent. of the total output was nearly 3s. 5d. per ton, an increase of less than 2d. on the previous year; the figure for Hematite Ironstone was 14s. 4d. per ton, an increase of 11d. Expressed in terms of total value there was an increase of £487,000, the figures being £2,351,000 in 1935 and £2,838,000 in 1936.

There was improvement in the number of persons employed and also in the regularity of employment. The average number of persons employed increased from 7,981 in 1935 to 8,846 in 1936 while the number of manshifts worked per wage-earner during the year

rose from 285 to 297.

In the West Cumberland area, the belief was expressed that further deposits of iron ore existed. The Development Council, which was formed at the instigation of the District Commissioner, therefore pressed for a geological and geophysical investigation and the matter is under consideration by the Departments concerned. Towards the end of the year, there were some fears of a shortage of pig-iron, partly owing to the large demands of armament manufacturers, and partly to the Civil War in Spain, from which considerable supplies of iron ore are obtained. So far as information for 1936 is available, however, there does not seem to have been any reduction in that source of supply.

The production of *hematite* iron ore obtained from mines on the North West Coast (Cumberland and Lancashire) rose from 840,000 tons in 1935 to 880,000 tons in 1936. The metal content remained unchanged at 53 per cent. The following table shows the quarterly

position during 1936:-

		Iron Ore.	Number of
		Tons.	Persons employed.
1st Quarter	 	218,000	1,844
2nd ,,	 • •	214,000	1,883
3rd ,,	 	221,000	1,893
4th ,,	 • •	227,000	1,902

The output in this District has been stimulated by the demand for steel in the manufacture of armaments and in the heavy industries, but output was still far below the level of 1929 when the figure was 1,392,000.

The total output of *Jurassic* ironstone in 1936 amounted to 11,417,000 tons, as compared with 9,742,000 tons in 1935. *Cleveland* accounted for 16 per cent. of the output as compared with 17 per cent. in 1935 and 24 per cent. in 1929. In this district which produces *Middle Lias* ironstone, production during 1936 was 1,848,000 tons, with an average metal content of 28 per cent., an increase of 13 per cent. over 1935 when the output was 1,640,000 tons. The figures for each quarter were as follows:—

		Iron Ore.	Number of
		Tons.	Persons employed.
1st Quarter	 	447,000	2,764
2nd ,,	 	446,000	2,850
3rd ,,	 	454,000	2,970
4th ,,	 	501,000	3,056

The largest part of the output of *Jurassic* Ironstone is, however, obtained from the deposits of *Lower Lias* (North Lincolnshire), *Middle Lias* (South Lincolnshire, Leicestershire, Northamptonshire and Oxfordshire) and *Inferior Oölite* (South Lincolnshire, Northamptonshire and Rutlandshire) which in 1936 accounted for 9,569,000 tons, with an average metal content ranging between 22 and 32 per cent., which was an increase of 1,467,000 tons over 1935 when the output was 8,102,000 tons. In the following figures, the results for each quarter are shown:—

		Iron Ore.	Number of
		Tons.	Persons Employed.
1st Quarter	 	2,368,000	3,121
2nd ,,	 	2,410,000	3,228
3rd ,,	 	2,363,000	3,210
4th ,,	 	2,428,000	3,227

Of the remaining 404,000 tons of iron ore and ironstone produced, 174,000 tons came from *Coal Measure Ironstone* with an average metal content of 32 per cent. The comparable figures for 1935 were 313,000 tons and 167,000 tons respectively.

Iron ore imported and retained in 1936 totalled 5,960,000 tons. Pig-iron is also obtained from purple ore of which 233,000 tons were available by roasting 311,000 tons of imported cupreous iron pyrites. Adding to this the home production of 12,701,000 tons of iron ore, and making allowance for the small quantity exported, there was available for home consumption 18,892,000 tons which is equal to nearly 7 million tons of metal. Although this is the same quantity as was available in 1929, a saving in the use of pig-iron in the manufacture of steel ingots and castings has been made possible since then, by the increased use of scrap metal.

According to the Board of Trade Index of Industrial Production, activity in the iron and steel trades increased by 20 per cent. since 1935. At the end of December, 1936, there were 110 pig-iron furnaces in blast out of 245 in existence as compared with 102 and 292

respectively, at the end of 1935.

Pig-iron production at 7,721,000 tons showed a substantial increase (20 per cent.) over that for 1935, which was 6,424,000 tons. This is the highest figure since the war except for the year 1920, when 8,035,000 tons were obtained. A 20 per cent. increase was also achieved in the production of steel ingots and castings between the years 1935 and 1936 the output being 9,859,000 tons and 11,785,000 tons respectively, the latter figure being a new high record.

The price level of iron and steel products as shown by the Board of

Trade Index (1930=100) was 100.5 in 1935 and 106.6 in 1936.

GROUP 2.—Non-Ferrous Ores.

(a) Tin.—The uncertainty of the market which was noted in the Report for 1935, became even more pronounced during 1936 and this was doubtless one of the factors which resulted in the output of tin ore showing only a small increase over that for 1935. Further reference is made below to the market prices of tin.

The output of dressed tin ore (i.e., black tin) in 1936 was 3,558 tons as compared with 3,535 tons in 1935. The average metal content, which in 1935 was 58 per cent., increased in 1936 to 59 per cent. There was an increase in output of 131 tons at mines and quarries, but production from tin streams and foreshores declined from 1,023 tons

in 1935 to 928 tons in 1936.

Although the proportion of tin ore obtained from sources other than mines and quarries, decreased from 32 per cent. in 1935 to 29 per cent. in 1936, it is still appreciably greater than in 1930 when

it was 21 per cent.

The most important sources of supply, which are in Cornwall, were Geevor, South Crofty, and East Pool and Agar mines, Gwythian Sands working, Porkellis, and Lady Gwendoline and Wheal Reeth mines. Together these accounted for 84 per cent. of the production of tin ore which was a slightly greater proportion than in 1935. At two small mines, operations were suspended, but at two others, development was commenced. Towards the end of the year Geevor Tin Mines, Limited, acquired an area adjoining the Geevor mine, previously known as the Pendeen mines, which it was hoped would yield useful results. At the Mount Wellington mine, where development was started in 1935, work was continued with some 70 men and production was recorded in the last quarter of 1936. mine is in one of the county's oldest mining areas, and copper ore was apparently the chief object of those working it, large deposits of tin being worked to only a small extent. It is believed that rich lodes of the latter ore are available. Development work is progressing favourably at the Great Work mine although difficulty in

de-watering had been encountered for a time, but this was overcome by the middle of the year. In the Leeds Shaft a pumping station was being installed at the 600 feet level in October. There was little change in the number of alluvial workings (tin streams and foreshores) where production was steady throughout the year.

The numbers of persons engaged at all the mines and workings, were, at the end of each quarter during 1936,1,835 (March),1,748 (June), 1,675 (September), 1,660 (December), an average of 1,730, which compares with 1,854 in 1935. These figures include persons engaged in development work and in the recovery of arsenic. Between 1935 and 1936 the number of days worked per wage-earner per annum is estimated to have increased by 5 per cent.

The bulk of the tin produced in this country is from imported ore. In 1936, the quantity of tin ore and concentrates imported amounted to 51,900 tons, which was 7,800 tons more than in 1935. In both years our chief sources of supply were Bolivia, Nigeria and Chile.

The second Agreement of the International Control Scheme expired on 31st December, 1936, and fears were expressed towards the end of the year as to whether it would prove possible to arrange a new Agreement; negotiations were, however, eventually successful and an Agreement was signed to cover a further five years to the end of 1941.

The following Table showing the movements of the quotas in each quarter is of interest. The continued rise in the figures since the beginning of 1935 is particularly striking and is a sign of the upward trend in the demand for tin which has taken place concurrently with the recovery from the recent world depression.

Review of quotas under the International Tin Control Scheme.

100000	Janor	000 0000			2				
1	st Agre	ement.			2nd 2	Agreem	ent—co	ntd.	
1931.				%	1935.				%
March-May				77.7	1st quarter	100			40
June-Dec.				$65 \cdot 4$	2nd quarter				45
1932.					3rd quarter				70
JanMay				$56 \cdot 2$	4th quarter				80
June				$43 \cdot 8$	1936.				
July-Dec.				$33 \cdot 3$	1st quarter				90
1933.					2nd quarter				85
Jan.–Dec.			!	$33 \cdot 3$	3rd quarter				90†
					4th quarter				105‡
2	nd Agr	eement.							
1934.									
1st quarter				40*	3	rd Agr	reement.		
2nd quarter				50*	1937.				
3rd quarter				50*	1st quarter				100
4th quarter				40*	2nd quarter				110
* Evolud	ing the	ovtra	anota	of 1	por cent for	comp	encatin	O 0376	r and

^{*} Excluding the extra quota of 4 per cent. for compensating over and under exports, and excluding the additional quota of 5 per cent. for the buffer stock.

[†] Quota Bolivia 75 per cent. † Quota Bolivia 90 per cent.

The world production of tin in 1936 was over 178,000 tons, an increase of 21 per cent. over that for 1935 and was the highest output since 1929 when 192,000 tons were produced. Apparent world consumption increased by 9 per cent. between 1935 and 1936; in the United Kingdom the increase amounted to only 2 per cent. but at a figure of 21,860 tons it was the highest since 1930.

The following prices and the comparable ones in the later paragraph dealing with lead and zinc, are based on figures received by the courtesy of the London Metal Exchange, which relate to weekly closing prices and are "ex-warehouse."

The cash price of Standard Tin declined in the first half of 1936 but had more than recovered by the end of the year. On 31st December, 1935, the price ranged from £233 to £233 5s. per ton, while the average for January, 1936, was £210, declining to £207 in February. The market hardened during March when the average rose to £213, but during the next two months it eased, the prices being £209 and £203. In June there was a substantial drop to £183 but the lowest quotation was on 3rd July when the price was £175. Tin had not been as low as this since April, 1933. But from July, 1936, the price recovered, the monthly averages in the latter half of the year rising from £186 in July to £232 in December. The highest point reached was on 13th November when a quotation of £239 10s. was recorded. Nevertheless, the average of the monthly prices during the year was £205 or £21 below the 1935 figure.

Lead and Zinc.—During the past two years there has been some decline in the output of dressed lead ore which, in 1934, reached a total of 68,122 tons, the highest figure for over 50 years. In 1935 it was 52,859 tons with an average metal content of 78 per cent. and in 1936 production declined still further to 39,093 tons with the same percentage of metal, but as will be observed in a later paragraph, the output of zinc with which the mining of lead is closely associated, increased. Exports of lead ore and concentrates declined from 45,160 tons in 1934 to 17,077 tons in 1935, but there was some improvement in 1936 when 26,139 tons were exported.

These violent fluctuations in exports in recent years have resulted in considerable differences in the quantities of lead ore available for consumption in this country. Ignoring small amounts imported, the figures for the years, 1934, 1935 and 1936 were 22,962, 35,782 and 12,954 tons respectively.

The average selling value of dressed lead ore increased from £8 10s. 8d. per ton in 1935 to £10 16s. 8d. in 1936 or by 27 per cent. The values during the four quarters of the latter year were £9 10s. 3d. in the March quarter (which compared with £10 12s. 0d. in the last quarter of 1935); £9 4s. 11d. (June quarter); £10 14s. 2d. (September quarter) and £14 2s. 7d. (December quarter). In the aggregate the value of the ore amounted to £423,500 which was only £27,600 less than in 1935 when the value was £451,100.

In spite of the reduction in the total output of lead ore, the number of producing mines rose from 13 in 1935 to 20 in 1936. This includes some mines where the principal output was Barytes, Witherite, Fluorspar or Calcspar. Mill Close Mine (Derbyshire) and Halkyn Mine (Flintshire) between them produced 91 per cent. of the total output in 1936. Sipton and St. Peters Mine (Northumberland), Rodderup Fell and Nentsbury Mines (Cumberland) together provided a further 7 per cent. of the total production of dressed lead ore.

Reference has been made in previous Reports to the important drainage scheme at Halkyn, Flintshire, which was commenced in 1929 with the object of draining an area of some 25 square miles where mining on a considerable scale had once been in operation. At the end of 1935 the length of the sea level tunnel from Bagillt was 41,161 feet. During 1936 a further 2,672 feet were driven giving a total distance of 43,833 feet (8·30 miles). Two lodes were cut and brought into production, while pump shafts were sunk and equipped on two other lodes.

There has been a striking increase in the output of dressed zinc ore since 1934. In that year it was 988 tons, rising to 2,116 tons in 1935 and to 7,869 tons in 1936. Output in 1936 was greater than in any year since 1918 and in addition to this amount there was also mined a further 6,688 tons of zinc ore which is subject to further treatment before sale, which has not been included in the various Tables (Appendix A) relating to zinc ore. Average metal content was 45 per cent. in 1934, 55 per cent. in 1935 and 54 per cent. in 1936. The aggregate value in 1936 was £22,868 as compared with £6,628 in the previous year. Practically all of the zinc ore was obtained from Mill Close and Halkyn mines. The former's recent rise to the position of principal producer has been very rapid, as 1935 was the first time since 1926 that zinc ore has been produced from the mine.

The number of persons employed at lead and zinc mines, including those engaged on development work was 1,482 at the end of 1935. During 1936 the numbers were, at the end of each quarter, 1,530 (March), 1,469 (June), 1,580 (September) and 1,675 (December) or an average of 1,563 throughout the year as compared with 1,317 in 1935.

The course of market prices in both Soft (Foreign) Lead and Spelter (or Zinc) followed a similar course. The last official quotation for the former in 1935 was £15 17s. 6d. The price declined to an average of £15 7s. 11d. in January, 1936 during which month the lowest price (£14 13s. 9d.) for the year was recorded; rose to £16 12s. 2d. in March; declined again to £15 3s. 5d. in June and from then steadily rose to £25 11s. 2d. in December, during which the year's maximum price was recorded at £28 7s. 6d. The average price during the year was £17 12s. 0d. as compared with £14 4s. 9d. in 1935. At the end of 1935 Spelter was quoted at £14 12s. 6d.

The average figure for January, 1936, was £14 9s. 9d.; after a rise during the next two months it declined until the lowest figure of £13 3s. 9d. was quoted in July. The lowest monthly average was in August when the price fell to £13 10s. 7d.; but from then it steadily increased to the end of the year, when the highest closing price of £19 18s. 9d. was recorded. The average for the year was £14 18s. 5d. as compared with £14 1s. 8d. in 1935.

GROUP 3.—MINERALS (OTHER THAN METALLIFEROUS ORES) USED MAINLY IN IRON AND STEEL-MAKING AND OTHER SMELTING PROCESSES.

The increased activity in the metal trades is indicated in the Board of Trade Index of Industrial Production which showed an increase of 20 per cent. as between 1935 and 1936 in the iron and steel trades and 5 per cent. in the non-ferrous metal trades and this is reflected in the output and employment at the mines and quarries which are covered in this Group. The output of the group as a whole has increased from 6,303,000 tons in 1935 to 7,059,000 tons in 1936 (12 per cent.) while the value has risen from £1,512,000 to £1,703,000 (13 per cent.).

The following table gives the figures for each mineral and a

comparison with 1935:—

*	Outp	ut. Percentage	Va		Net Selling per Ton.
Mineral.	Raised in 1936.	change as compared with 1935.	19	n 36.	Change as compared with 1935.
Fireday	Tons. 2,524,000	%	s. 6		d. +4
Fireclay Dolomite used as a refrac-	2,324,000	+11	O	0	+4
tory material	616,000	+13	3	3	-
Silica Stone, Silica Sand and Ganister Limestone and Dolomite	637,000	+11	7	4	-1
for use as a fluxing agent	2,447,000	+13	3	0	-2
Moulding and Pig-bed Sand		+15	3		-1
Fluorspar	33,000	+ 6	15	6	-8

The quantity of fireclay exported in 1936 amounted to 16,536 tons, as compared with 29,755 tons in 1935 while fluorspar exports were 2,736 tons and 5,006 tons respectively.

Much research work has been done in refractories during recent years and new products with a wide variety of uses have been

discovered.

There was an increase in the average number of persons employed in 1936 as compared with 1935 of 600, the figures being 8,700 and 8,100 in the two years.

GROUP 4.—MINERALS USED MAINLY IN CHINA, POTTERY AND GLASS MANUFACTURE.

There was an increase in both the total output and value of the minerals covered by this Group as compared with 1935. Production increased by 10 per cent. while the aggregate value rose from £1,100,000 in 1935 to £1,230,000 in 1936 or by 12 per cent. The average net selling value, with the exception of China Stone (which remained at the same figure as for 1935), showed increases ranging from 1d. to 1s. 2d. per ton.

The average number of persons employed increased from 4,100 in 1935 to 4,400 in 1936.

Details of output and value for each mineral are shown in the following Table:—

	Output.		Average Net Sellin Value per Ton				
		Percentage					
	Raised	change as	I_{I}	2	Change as		
Mineral.	in	compared	193	36.	compared		
	1936.	with 1935.			with 1935.		
	Tons.	%	s.	d.	s. d.		
China Stone	66,500	+16	26	10	national residence of the last		
Potters' Clay (including							
Ball Clay)	213,400	+21	18	3	+1 1		
Sand for use in Glass-							
making	128,900	- 4	4	0	+0 2		
Chert for use in China							
and Pottery Trades	4,500	+ 1	72	3	+1 2		
China Clay	746,900	+ 6	23	6	+0 7		
Limestone for use in							
Glass-making	107,000	+39	5	3	+0 1		

A number of separate firms were combined in 1932 to form one large Company which was responsible in 1936 for 63 per cent. of the output of china clay and 50 per cent. of that of china stone. In September, 1936, the Company opened their own power plant to supply electricity to their works. Twelve sub-stations had been erected and were then already in operation while it was hoped eventually to reach an output of 15 million units D.C.

Of those minerals in this Group for which particulars of exports are available, china clay showed an increase in 1936 of 18,900 tons (4 per cent.) over 1935 when they were 430,500 tons. In 1936 the tonnage exported amounted to 60 per cent. of the output.

Exports of ball clay declined from 65,300 tons in 1935 to 57,500 tons in 1936 (12 per cent.) and those of felspar (including china stone) from 10,000 tons to 8,900 tons (11 per cent.).

GROUP 5.—MINERALS USED MAINLY FOR BUILDING, ROAD-MAKING, LIME, CEMENT, CONCRETE, ETC.

The minerals in this Group constitute both in output and value by far the largest part of this Section of the Report. On the basis of value they accounted for 62 per cent. of the total.

Production amounted to 78,998,000 tons with a total net selling value of £14,258,000 in 1936. Comparable figures for 1935 were 71,627,000 tons and £13,124,000. This represents an increase of 10 per cent. in output and 9 per cent. in value. In this connection it is of interest to record that the number of new buildings erected in the year ended March, 1937, reached the record figure of 346,047, which compares with 324,860 in the previous year and 329,106 in the year ended March, 1935.

Although exact comparisons are not possible the output of minerals included in this Group has more than doubled since 1913.

The average net selling value of these minerals is not subject to wide variation and in 1936 varied little from 1935.

The uses to which the minerals in this group are put fall roughly under three headings (a) building, (b) road-making, (c) lime, concrete and plaster manufacture. It is impossible to make a precise apportionment, but so far as information is available the following are the figures:—

		Quantity.		Net	Selling Val	ues.
			Percentage			Percentage
	1935.	1936.	increase.	1935.	1936.	increase.
	Tons.	Tons.	%	£	£	%
(a)	35,845,000	39,059,000	9	6,032,000	6,420,000	6
(b)	19,992,000	22,450,000	12	5,029,000	5,591,000	11
(c)	15,790,000	17,489,000	11	2,063,000	2,247,000	9

In order to assist the monumental side of the granite trade to compete with foreign competition which has increased considerably during the past decade, an increase of the import duty* from 20 to 30 per cent. ad valorem was imposed to take effect from 22nd September, 1936 on "granite, dressed, polished, carved or otherwise worked (other than setts and curbs, and granite sawn or planed on one or two sides only but not further worked)."

In November, 1936, negotiations were initiated by this country for the formation of a European cement cartel. The producers participating in these discussions in addition to those of Great Britain were the Belgian cement cartel which supervises nearly all of the Belgian cement industry, and manufacturers in Denmark, Germany and Yugoslavia. Other European countries affected were France, Netherlands, Norway, Poland and Sweden. Negotiations were still in progress at the end of the year.

The average number of persons employed in 1936 was 66,800 as compared with 64,800 in 1935, an increase of 3 per cent.

^{*} Additional Import Duties (No. 27) Order, 1936 (S.R. & O. 1936, No. 872).

GROUP 6.—OTHER MINERALS.

Separate particulars of the output and value of the minerals covered in this Group will be found in Table 1 (g) on pages 116 and 117.

References to the Scottish Shale Oil Industry will be found on pages 15 and 106, while some reference is made below to salt and barytes (including witherite).

The output of the group in 1936 increased by 3 per cent. as compared with 1935, while the total value which was £2,077,000 in 1935 rose to £2,168,000 in 1936 or by 4 per cent.

The average net selling value of these minerals showed little change but on the whole it was slightly higher than in 1935.

No change occurred in the number of persons employed, the numbers recorded in both 1935 and 1936 being 7,100.

Salt.—The total output of salt and salt brine amounted to 2,818,000 tons valued at £1,113,000 in 1936 as against 2,687,000 tons and £1,055,000 in 1935, increases of 5 and 6 per cent. respectively.

Sixty-eight per cent. of the salt produced is contained in brine used for purposes other than salt making, while the Cheshire deposits account for 81 per cent. of the total output of the country. Other counties yielding salt were Durham, Staffordshire, Worcestershire, Yorkshire and Lancashire and the Isle of Man, arranged according to the value of their output.

In 1936, particulars of the vacuum process of evaporation were collected, and the results are shown in the following Table, together with certain other particulars:—

r						
	Outp	ut.			Vet Se ber To	
		Percenta		1		
	Obtained	change	as In	1936.	. Chan	ge as
	in 1936.					
		with 19				
	Tons.	%	s.	d.	S.	d.
Rock Salt mined	17,000	+6	25	10	-0	4
Salt evaporated from Brine						
(a) Vacuum	325,000 567,000	$\downarrow + 7$	$\int 23$	5)	0	6
(b) Other	567,000	<i>\</i> ' '	(22	35		
Salt content of Brine	1 000 000		0	10		4
pumped to alkali works	1,909,000	+ 4	0	10	+0	1

Exports of rock salt amounted to 7,900 tons, those of vacuum salt to 102,600 tons, while 169,600 tons of other salt were exported: in all, 280,100 tons, valued at £724,000 flo.b. In 1935 the total figures were 271,700 tons, with a value of £691,300. While the proportion exported to British Countries showed a slight decrease as between 1934 and 1935 the percentages being 58 and 57 respectively, it rose to 60 per cent. in 1936.

Barytes and Witherite.—There was a small decrease in the output of barium compounds in 1936, when 73,100 tons were produced as compared with the record total of 78,100 tons in 1935.

A further advance was made in the average net selling value at the mines and quarries, but the total value decreased from £138,500 in

1935 to £133,500 in 1936.

The following figures give a more detailed comparison:—

	Out_I	Average Net Sellin Value per Ton.			
	Raised in 1936.	Percentage increase as compared with 1935,	In 193	86.	Change as compared with 1935.
Barytes and Witherite—	Tons.	%	S.	d.	s. d.
Not Ground	 46,000	-10	27	3	+0 3
Ground, Bleached	 5,700	_ 9	75	7	+3 1
Ground, Unbleached	 21,400	+ 4	46	1	$+0\ 10$

The principal sources of supply of barytes in 1936 were the Counties of Ayr and Bute (23,000 tons), Devon (19,000 tons) and Salop (14,000 tons), while smaller quantities were obtained from Derby, Durham, York, Westmorland and Montgomery.

Witherite was obtained from the Settlingstones (metalliferous) mine in Northumberland, and in Durham from the Morrison pit of the South Moor mine and the Busty pit of the Holmside mine.

Since 1933, exports of barytes have increased, rising from 1,561 tons in that year to 3,135 in 1935, while in 1936 there was an increase to 4,161 tons. Imports (retained) of this mineral are, however, substantial and in 1936 amounted to 52,806 tons which compared with 45,156 tons in 1935, an increase of 17 per cent. Of the imports in 1936, 19,946 tons were ground and 32,860 tons unground.

About half the home consumption of barytes was produced in this country during the 10 years ended 1931, since then the propor-

tion has risen to about two-thirds.

PART III.

PROCEEDINGS UNDER PART I OF THE MINES (WORKING FACILITIES AND SUPPORT) ACT, 1923, PART II OF THE MINING INDUSTRY ACT, 1926, AND THE MINES (WORKING FACILITIES) ACT, 1934.

The number of applications referred during the year to the Railway and Canal Commission was eight. Four of these were heard and determined and in four cases pleadings were not completed at the end of the year. Of four applications which had been referred to the Commission during 1935, three were decided during 1936 and one, an application by Stewarts and Lloyd, Ltd., for ancillary rights, was withdrawn with the consent of all parties.

Proceedings in England and Wales.

Three of the six applications decided were "numerosity" cases, *i.e.*, private arrangement was impracticable as the number of persons involved was too great. These were:—

(i) Pope and Pearson, Limited, were granted the right to work coal in the Diamond Seam under premises at Normanton with ancillary rights.

(ii) Pontefract Collieries, Limited, obtained the right to work small parcels of coal and fireclay at Pontefract and ancillary rights.

(iii) Newton Chambers, Limited, were granted the right to work coal and fireclay, together with ancillary rights, at Rotherham.

In each of the above-mentioned cases the rights were granted subject to conditions laid down for the protection of objectors.

The remaining cases were as follows:—

(iv) The Walsall Wood Colliery Company, Limited, applied for the grant of a right to work coal and other minerals underlying parcels of land which comprised in all about 698 acres, in the Pelsall Coalfield in the County of Staffordshire, together with the necessary ancillary rights. The major portion of the area, consisting of about 539 acres of land, was in the ownership of the Earl of Bradford and had been leased to the applicants or their predecessors since the year 1874. The Company had, however, been unable to obtain a renewal of various leases expiring in 1936, owing to their being unable to see their way to providing a reserve fund sufficient, in the view of the owner, to meet any claims for compensation for subsidence which might arise. The rest of the area in which rights were sought was vested in 67 owners, and the applicants had either been unable to obtain a renewal of existing leases or had failed to trace ownership.

At the hearing of the case it transpired that the Earl of Bradford had withdrawn his opposition and was prepared to support the application. Other objectors having consented to grant a lease of a parcel of 139 acres of land, the Court dismissed objections lodged by a local Urban District Council and granted the rights desired by the applicants, subject to terms and conditions relating principally to

the payment of royalties and compensation for damage.

(v) Arising out of an application by the Broxbourne Sand and Gravel Pits, Limited, an important decision was given by the Court at a preliminary hearing on points of law. The applicants asked for the grant of an ancillary right to extinguish, divert or lower a public footpath on a field owned by them at Wormley Pit Quarry, in Hertfordshire. They contended that the proper and efficient working of their quarry was hampered by the existence of the footpath, as it was impossible for them to obtain valuable supplies of sand and gravel underlying the path without letting down its surface. The Hoddesdon Urban District Council, who lodged objections, had refused their consent to the diversion of the footpath, except on terms which the applicants considered to be unreasonable, and had stated that they were prepared to take action to prevent any part of it being let down or endangered. The application was also opposed by the Hertfordshire County Council.

After pleadings were heard, the application was dismissed on the ground that the Court had no jurisdiction concurrent with that created by the Highways Act, 1935, which provided that in order to stop up, extinguish or divert a highway it was necessary to obtain the consent of the Local Authority, the Urban District Council, a certificate of two justices and confirmation by quarter sessions.

An appeal made by the applicants against the Order of the

Court was subsequently withdrawn.

(vi) The West of England Road Metal Company applied for the right to work minerals at their quarry at Porthoustock, Cornwall. The minerals for which the right was sought were granite and other stone used for road making underlying parcels of land adjoining the quarry, and the applicants maintained that it was necessary to acquire the minerals if the quarry workings were to continue. They had been unable to purchase the desired lands, as the owners had demanded a purchase price of £6,750 which was considered by the applicants to be unreasonable.

The Court decided in favour of the applicants and fixed the amount of compensation to be paid to the objectors at £2,650, with the right to the applicants to deduct their taxed or agreed costs

from such sum.

Proceedings in Scotland.

(vii) An application was made by Ballachulish Quarries, Limited, for the grant of a right to work minerals and an ancillary right. The minerals consisted of slate rock and lay under a narrow strip of about $1\frac{1}{2}$ acres of land adjoining Ballachulish Quarry and being part of the lands of Brecklet. The seams of rock were a continuation of the seams worked by the applicants from the quarry and

it was contended that they could not be worked separately, nor could the slate be quarried in any practicable or economic way from the Brecklet side. The ancillary right required was for the use of a further part of the Brecklet lands, amounting to about 3 acres, as a tipping place.

The applicants were tenants of the land in question under an expiring lease which had been obtained from a former owner, and they had approached the present proprietors for an extension of their tenancy. Terms had, however, been demanded which were alleged to be wholly unreasonable and it was not reasonably practicable for

the desired rights to be obtained by private arrangement.

Objections were lodged by the present owners, who stated that the minerals in question formed an integral part of the Brecklet area. They had purchased the lands of Brecklet for the purpose of working the minerals and desired to be allowed to use their own property for that purpose. They denied that there was any danger

of the minerals being left permanently unworked.

At the hearing of the case, it was stated by the Court that it had not been maintained that the objectors had definitely refused to grant rights to the applicants in the parts of Brecklet specified, and they had, in fact, offered to sell the land at a price. The applicants had failed to satisfy the Court that the objectors had unreasonably refused to grant the right desired, or that they had demanded terms which, having regard to the circumstances, were unreasonable. The powers asked for were refused, with expenses to the objectors.

PART IV.

HEALTH AND SAFETY.

This part of the Report deals only with matters of general administration and the work of the Official Testing Stations. Health and safety subjects in their detailed technical and statistical aspects are covered by the Annual Report of H.M. Chief Inspector of Mines, which immediately follows this part of this Report, and by the Annual Reports (all published separately) of H.M. Divisional Inspectors of Mines, of the Safety in Mines Research Board and the Health Advisory Committee, and of H.M. Electrical Inspector.

1.—ROYAL COMMISSION ON SAFETY IN COAL MINES.

The Royal Commission on Safety in Coal Mines held its first public sitting in February for the taking of evidence and by the end of the year had heard evidence from the Mines Department and each of the eight Divisional Inspectors, from a number of representative associations in the coal mining industry, and from the Safety in Mines Research Board.

2. Public Inquiries and Committees.

(a) Inquiries into Mining Accidents.

(i) Gresford Colliery.—The public sittings of the Court of Inquiry set up to investigate the causes and circumstances of the disaster at Gresford Colliery were resumed in March, 1936, and terminated in July. In all the Court sat for 38 days, of which 30 had been devoted to the hearing of evidence.

Three Reports were made, one by Sir Henry Walker, the Commissioner, and one by each of the two Assessors, Mr. John Brass, representing the Mining Association, and Mr. Joseph Jones, representing the Mineworkers' Federation. The Reports were published in February, 1937*, and were debated in the House of Commons on 23rd February, when it was resolved: "That this House views with deep concern the conditions revealed by the inquiry into the Gresford Colliery explosion in which two hundred and sixty-five lives were lost, and is of opinion that grave responsibility rests upon the country and Parliament to prevent such disasters by adopting immediate and effective measures for ensuring that the industry is carried on under conditions of maximum safety." In April, 1937, legal proceedings were instituted by the Director of Public Prosecutions against the owners, the former manager, the under-

^{*} Reports on the Causes of and Circumstances attending the Explosion which occurred at Gresford Colliery, Denbigh, on the 22nd September, 1934. (Cmd. 5358, price 3s. 6d. net.)

manager, and certain subordinate officials (deputies and shot-firers) of the colliery. Forty-three informations were laid, and the charges were heard at Wrexham from 20th to 27th April, 1937. Fines were imposed in respect of eight charges, and totalled £140, with £350 costs. The remaining charges were dismissed or withdrawn.

The Dennis district of the colliery in which the explosion took place remained sealed during the year. The condition of the atmosphere inside the stoppings, which was repeatedly sampled and analysed, continued to indicate that in-leakages of air were still occurring, despite the taking of further measures to prevent this, and that if the sealed area were opened up and ventilated, heating might break out and further explosions be caused.

(ii) Wharncliffe Woodmoor Colliery.—H.M. Chief Inspector of Mines was appointed to hold a formal investigation into the explosion which occurred on 6th August, 1936, at Wharncliffe Woodmoor Colliery, South Yorkshire, and resulted in the loss of 58 lives. The inquiry was held at Barnsley during October and November and lasted six days. The report was published in July, 1937†.

(b) Other Inquiries.

Firedamp Detectors.—A Departmental Committee was appointed on 29th December, 1936, "to inquire into the working of the Firedamp Detector Regulations, 1935, and to make recommendations."

The constitution of the Committee, which is under the Chairmanship of Mr. (now the Rt. Hon.) Isaac Foot, a former Secretary for Mines, will be found on page 219, and the events leading up to the appointment of the Committee are recounted in Section 5 of this part of the Report.

3. REGULATIONS AND ORDERS.

(a) Of General Application.

- (1) Winding and Haulage.—General Regulations were made on 2nd March, 1937, to amend the statutory requirements as to measures for the prevention of overwinding, and as to the care and treatment of winding and haulage ropes and of detaching gear. Part I of the Regulations, which deals with precautions against overwinding, will come into force on 1st January, 1938; Parts II–IV of the Regulations came into force on 1st April, 1937. The subject is dealt with more fully in the appropriate section (page 63).
- (2) Quarries and Metalliferous Mines.—Hitherto quarries and the pitbanks of metalliferous mines have been partly regulated by the Factory Acts. The Factories Bill at present before Parliament proposes to end this position and (conferring on the Board of Trade the like power to make General Regulations for quarries as it already has in respect to metalliferous mines) to leave the

[†] Report on the Causes of and Circumstances attending the Explosion which occurred at Wharncliffe Woodmoor Nos. 1, 2 and 3 Colliery, Yorkshire, on 6th August, 1936. (Cmd. 5503. Price 2s. 0d. net.)

future government of these places entirely to the Mines and Quarries Acts. Draft General Regulations for metalliferous mines and quarries are, therefore, in preparation and will be placed before the industries as soon as possible.

(b) Applicable to Individual Mines and Quarries.

During 1936, Special Regulations and Special Rules were established at individual mines and quarries to supplement the provisions of the Statutes and Regulations as follows:—

(i) Mines under the Coal Mines Act, 1911.	
Airways.—Prescribing minimum distances between main	
airways and the distances from one another of connexions	
between main airways (Section 42 (5))	3
Dry Cleaning Plants.—Regulating the use of air separation	
plant for dry cleaning of coal (Section 87)	1
Internal Combustion Engines.—Regulating the use of internal	
combustion engines underground (Section 87)	1
Lighting.*—Supplementing No. 11 of the Coal Mines General	
Regulations (Lighting) 1934 so as to permit the use of fixed	
electric lights in certain places not covered by paragraphs	4
(a), (b) and (c) of the Regulation	4
Amendment of Special Regulations supplementing No. 11	1
of the Coal Mines General Regulations (Lighting) 1934	1
Safety Lamps.—Regulations for the use of safety lamps as a temporary precaution in naked light mines	6
Ganister Regulations, 1920.—Relaxation or suspension of	U
certain Regulations	8
(ii) Mines under the Metalliferous Mines Regulation Act, 1872:	
Special Rules (Section 24):	
A modernized code of Special Rules regarding dust preventive	
measures at chert and ganister mines has been drawn up to	
take the place of the old code of Special Rules for ganister mines.	
	10
Tin Mines Code (Revised)	
Electricity Code	2
Hæmatite Iron Ore Mines Code (with additional dust	1
prevention clauses)	1
D I D I Colo Colo Con Mineral Toron Con Mine	1
	1
Storage Battery Locomotives Code	2

^{*} No. 78 of the General Regulations of 10th July, 1913, was revoked by the Coal Mines General Regulations (Lighting) 1934, but the Special Regulations made thereunder remain in force until revoked individually. Twelve such individual revocations were effected during 1936 and only one such Special Regulation now remains in force.

(iii) Quarries:							
Special Rules:							
General Code							96
Silica Quarries Code							8
Slate Quarries Code	• •		• •		• •	• •	1
Exemptions and con year—subject in the mensuring safety—under Regulations as follows:	ajority	of cas	ses to	special	cond	itions	for
(i) Mines under the Coal	Mines	Act, 19	11:				
Electricity.—Exempting							
certain requirements			of eart	hing o	conduc	tors	
(Regulations 125 (b) as		. ,,	• •		• •		64
Permitting the cor	tinued	use of	unarm	oured	cables	and	
the earthing of a poin							0
an electrical system (F	Kegulati	ons 128	9 (e) (1V) and I	(31 (a))	• •	2
Rescue: General Regular	tions of	10th D	ecember	r, 1928	:		
Exemption from certa	in requi	irement	s				7
Safety Lamps.—Exempt	ing fror	n the u	se of s	afety la	amps a	fter	
an explosion of infla	mmable	e gas	causing	perso	nal in	jury	
(Section 32 (1) (b))						• •	2
Shafts and Outlets.—Exe	empting	from	the pro	visions	requi	ring	
two shafts or outlets (3
Winding Apparatus.—E							
ing hook (Section 40 (. , ,		• •				2
Working under Moss, et							_
under moss. (Genera	Regula	ation 2	9 01 301	th July	, 1920)	• •	3
(ii) Mines under the Met	alliferor	us Min	es Regu	lation	Act, 18	372:	
Storage Battery Locomoti	ves.—C	onsent	to use	underg	round		2

4. MINE LIGHTING.

(a) Lighting by means of Safety Lamps.

During the early part of 1936, some misgivings were felt at the slow progress made by many colliery companies in respect of their obligation to complete, by 1st January, 1937, the installation of safety lamps conforming to the higher standard of lighting performance laid down in the Lighting Regulations of 1st June, 1934. While many colliery companies were in advance of the fixed date, or had the matter properly in hand, there were many others which had, to all appearances, done little or nothing, and it was felt that, towards the end of the year, owners would find it increasingly difficult to

secure delivery from the makers of the new lamps required to ensure compliance with the Regulations.

The Secretary for Mines accordingly wrote to Sir Evan Williams, President of the Mining Association, asking that members of the Association should be reminded of their obligations under Part I of the Regulations. In response, the Mining Association asked each of the district Coalowners' Associations to forward a copy of the Secretary for Mines' letter to every colliery undertaking in the district.

In November, 1936, a final reminder was issued which took the form of a Mines Department Circular (No. 89), to which was attached for the guidance of owners and managers a list of safety lamps approved under the Lighting Schedule (corrected to 1st October, 1936), and a list of approved lamp bulbs for use in Schedule A lamps, similarly brought up to date.

Early in January, 1937, H.M. Divisional Inspectors of Mines were asked to investigate and report upon the position in regard to compliance with the Regulations and to take immediate action in the cases where the change-over had not been completed. Several cases were reported of collieries where installations of Schedule A lamps were not complete, but no instance came to light in which orders had not been placed with lamp manufacturers for the necessary number of lamps. By the end of March, 1937, all collieries not in compliance at the date of the Inspectors' reports had obtained the necessary supplies of lamps.

In accordance with No. 3 of the Regulations the next step in regard to mine lighting is to ensure that the benefits to be derived from the improved lighting standards now required for safety lamps used at the face, mechanical loading places, etc., will not be lost by failure to maintain the lamps in such a condition as to avoid "an

unreasonable rate or extent of deterioration."

To this end, steps have been taken to collect information regarding the extent of deterioration in the lighting performance of lamps of various types at collieries where the maintenance arrangements are efficient, with a view to the establishment of reasonable

working standards of comparison.

In general, the information has shown that deterioration in these circumstances is smaller than was expected and it has been decided that during the current year H.M. Inspectors shall take special measures to require managements to comply with Regulation 3 by raising the general standard of lamp-room maintenance to within at least reasonable distance of that already attained at the best run lamp-rooms. In those cases (which it is hoped will be comparatively few) where lamp-room arrangements continue to be unsatisfactory judged by the standards thus determined, appropriate action will have to be taken.

The statistics relating to safety lamps which are given in Table 44 of Appendix A show the position at 30th June, 1936, at which date

the Lighting Regulations had been in force for almost two years, but only to the limited extent that, after 1st September, 1934, all new lamps installed in those parts of any mine to which Part I of the Regulations applies had to conform to the new standard of

lighting performance.

At that date (30th June, 1936) there were 616,857 safety lamps in use, 2,890 less than at the same date of the previous year and 107,739 less than on 30th June, 1931. This total decrease reflects the reduction in the number of persons employed below ground and represents a balance between an increase of 10,112 in the number of electric lamps and a decrease of 13,002 in the number of flame lamps in use.

An increase of 13,476 in the number of electric *cap* lamps in use more than offset the decrease of 3,364 in the number of electric *hand* lamps and reflects the welcome tendency, observable since 1930, for the use of electric cap lamps to increase at the expense of

hand lamps.

The figures for the number of $2\cdot 5$ and $4\cdot 0$ volt hand lamps show that the proportion of these lamps to the total of electric hand lamps in use has increased from nearly 53 per cent. in 1935 to over 72 per cent. in 1936. Since practically all cap lamps and $2\cdot 5$ and $4\cdot 0$ volt hand lamps comply with the new lighting standards, it is not surprising that the use of lamps in these categories has advanced so rapidly in recent years. Of the 54,188 cap lamps in use, representing roughly 13 per cent. of all electric lamps, 29,382 were in use in Scotland, while only 1,461 were in use in mines in South Wales and Monmouthshire. In contrast to this, only 2,531 out of the total of 352,578 electric hand lamps were in use in Scotland.

(b) Lighting otherwise than by Safety Lamps.

The number of lighting points underground operated from the "mains" shows disappointingly little increase despite the fact that Nos. 11–13 of the Lighting Regulations have facilitated this method of lighting by removing some of the restrictions previously placed on its use. Thus, at 30th June, 1936, there were in use 90,601 lighting points operated from the mains as compared with 88,672 in 1935 and 85,795 in 1934. Practically half of these (44,050) were at pit bottoms and sidings and over one quarter (26,539) at stables and machinery rooms. The number in use on roadways had, however, increased from 18,377 to 19,979.

There are strong grounds for a much greater use of this method of lighting in and around pit bottoms and landings, and within a reasonable distance from the pit bottom along main haulage roads which are main intake airways. In some gassy mines there is good reason for keeping it well away from the coal-face area and it is not suggested for a moment that risks should be taken in any such circumstances, but it is difficult, indeed, to see any adequate reason why there should not be more mains lighting along main

haulage (intake) roads at mines where electric power is already used at the coal-face for coal-cutting, conveying or other purposes.

The increase in the number of compressed air lamps (from 1,324 to 1,607), though a little larger than the increase (of 120) recorded in 1935, is disappointingly small, and it is to be hoped that the success which has attended the efforts of a few progressive managements to apply this means of lighting systematically at roadheads and suitable coal-faces may mark the beginning of a better realization of its value.

A special investigation was made at certain collieries during the early part of 1937, in order to collect information as to the standard of maintenance of compressed air lamps, as the result of which it was found that maintenance at most pits was satisfactory. There were, however, instances where the managements concerned did not appear to have appreciated the necessity of a regular periodic overhaul of the equipment in the interests of both safety and efficiency. This overhaul should include a test of the efficiency of the cut-out, which is provided as a safeguard against any risk of explosion due to a glowing lamp filament in the event of the breakage of the outer glass.

5. The Provision of Firedamp Detectors for Use by Workmen.

The Report for 1935 mentioned that the Secretary for Mines did not consider that the steps taken at collieries to try out the working of automatic firedamp detectors under representative pit conditions had been satisfactorily carried out by the end of that year, and that a deputation of the Mining Association met him on the 23rd April, 1936, and reported upon certain arrangements which, they said, had been made to secure wider experience with the detectors. The deputation promised to furnish interim reports on progress made with the new proposals then submitted.

The first progress report which was received on the 18th June, was not considered to be satisfactory, and a letter was addressed to the Mining Association pointing out that the progress made was very disappointing, and that little fresh experience of value had

vet been obtained in several large districts.

The second progress report was received early in November, and marked some improvement in the position. The Northumberland and Durham Coal Owners' Associations had been experimenting with a dozen detectors which had been tried out successively in a number of different collieries. In West Yorkshire, too, some trials had been made at two collieries. Some information was also furnished in regard to Scotland, but no further mention was made of the experiments which had been promised in South Wales.

Following upon the receipt of this report it was decided that the time had come for setting up the Committee which had been promised

when the experimental Regulations were made to operate for a period of two years from the 1st October, 1935, and an announcement of the intention to set up such a Committee was made in the House of Commons on the 24th November, 1936. The appointment of the Committee was announced in the House of Commons on the 17th December.

In March, 1937, a third report was received relating to North Staffordshire, where 24 automatic detectors had been purchased by the local Coal Owners' Association, and to South Wales, where ten detectors had been tried.

An interesting development during the year was the announcement by the Mining Association on 3rd April, 1936, of an offer of a prize of £500 for the best combined safety lamp and automatic detector. The announcement was made in the following terms:—

"Impressed with the importance of developing a thoroughly satisfactory lamp for use underground in mines, which will not only give an automatic and unfailing signal of the presence of firedamp, but will also provide a maximum illumination for working purposes at the coal-face, the Central Committee of the Mining Association at a meeting yesterday decided to offer a prize of $\pounds500$ for such a lamp as will pass the necessary official tests."

A large Committee on which two representatives of the Mines Department and a representative of the Mineworkers' Federation served was appointed to draw up the terms of the competition, and these were eventually circulated in December, 1936. Entrants for the prize were required to submit drawings and detailed particulars of their appliances to the Mining Association not later than 30th June, 1937.

No additional types of firedamp detector (beyond the Thornton Detector, the approval of which was mentioned in last year's Report) were approved during the year, but the development of the Naylor Automatic "Spiralarm" to which reference was also made in last year's Report, has continued during the year. As the working of the alarm is dependent upon the heat of the safety lamp flame, special experiments have been made with alarms, set to indicate at different percentages of firedamp, to ascertain the behaviour of the flame in atmospheres deficient in oxygen, and to endeavour to arrange a setting which will operate the alarm within sufficiently close limits of the firedamp percentage even when blackdamp is present. Concurrently with these experiments, which were still in progress at the end of the year, the manufacturers have been proceeding with improvements in the general construction and materials of the alarm, and with the development of a smaller, lighter type for use in thin seams

Another development of considerable interest was a new type of "Ringrose" automatic firedamp detector consisting of an electric

safety lamp giving an "all-round" light complying with the Lighting Regulations, combined with gas detection apparatus operating on the same principle as the "Ringrose Alarm" already approved. The indication of the presence of firedamp is given, however, not by the illumination of a special red bulb, but by a sudden and marked dimming of the working light when a resistance is connected into the circuit by the operation of a relay. The resistance can be short-circuited, and the full light temporarily restored, by holding down a push-button switch. The detector was undergoing the full official tests during April, 1937.

6. The Coal Mines General Regulations (Winding and Haulage), 1937.

The draft Regulations which had been circulated to the representative bodies of the industry in June, 1936, were, during the latter part of the year, the subject of discussion with the interested parties, in the course of which several amendments to the draft were put forward. These amendments were carefully considered and a revised draft of certain clauses was circulated in November to the various representative bodies. Part I of the Regulations dealing with the precautions to be taken against overwinding was, however, retained unchanged, despite various amendments which had been suggested, some to make the regulations more stringent and others to weaken them, as these clauses had been carefully drawn to give effect to the unanimous recommendations of the Overwind Prevention Committee.

The Regulations were formally published in draft in January, 1937, and came into force on 1st April, 1937, with the exception of Part I which will not come into force until 1st January, 1938, thus allowing managements time to complete the necessary alterations to the winding machinery.

The general effect of these Regulations is as follows:—

Part I, which amends Section 40 (2) and (10) of the Act, prescribes a minimum standard of efficient performance for automatic contrivances to prevent overwinding, and a new and higher standard of efficiency for winding engine brakes, and requires periodic testing of both the automatic contrivances and the brakes. It also amends the requirements as to the treatment of cage chains and detaching gear previously governed by General Regulation 82.

Part II, which amends Section 40 (5) of the Act, regulates the use of winding ropes and requires a special examination, at least once every month, of every winding rope in use. These inspections are in addition to those required daily by Section 66 of the Act. This part also empowers the Secretary for Mines to permit the use for more than $3\frac{1}{2}$ years of ropes which have not been, and are not to be, in ordinary use, provided that satisfactory evidence is produced that the life of the rope may be extended without danger. This

power is intended to be used sparingly and managements will be required to give at least three months' notice of application in order that the necessary inquiries and tests may be made and a decision on the application given in good time before the normal statutory life of the rope in question has expired.

The Regulations in Part III, which prescribe the method to be employed for the capping of winding ropes in accordance with No. 6 of these Regulations and of haulage ropes in accordance with Section 46 of the Act, are in substitution for Nos. 83 to 88 of the General Regulations of 10th July, 1913.

Part IV contains provisions of a general nature including a requirement that records shall be kept at the mine of the measures taken to comply with Nos. 4, 5, 6, 7 and 10 of the Regulations.

7. SAFETY IN MINES RESEARCH BOARD.

No change was made during the year in the membership of the Board. The extended term of appointment of Major D. H. Currer Briggs and Mr. Thomas Cape would have ended on 31st December, 1936, but at the special request of the Secretary for Mines they have accepted a further extension of their term of service for a period of twelve months.

At the Buxton Research Station a new laboratory for electrical researches, in which explosions that would damage an ordinary laboratory can be safely carried out, was completed during the year.

Evidence was submitted by the Board to the Royal Commission on Safety in Coal Mines. Prior to the hearing of the evidence in July, the Commission inspected the Research Stations at Sheffield and Buxton.

Co-operation with mining research organisations abroad has been maintained. In September, representatives of the Board visited the United States to confer with the Director and Officers of the Bureau of Mines in regard to matters of research and safety propaganda.

The Board's work as regards the problem of noise has been developed. Steps have been taken with the object of devising means of suppressing noise at the source and of arresting airtransmitted and structure-transmitted noises. Personal protection against noise by means of "ear-defenders" has also received attention.

Satisfactory progress has continued to be made with the development and use of protective equipment.

Arrangements have been made for the Board to co-operate in the examination of broken haulage gear which has caused accidents.

Detailed particulars of the progress of the Board's work during the year are published separately in their Fifteenth Annual Report.

8. Testing Work.

The Mines Department testing work has continued in full volume throughout the year, the main classes of work being those dealt with in the sections which follow.

The testing is primarily directed to the prevention of firedamp and coal-dust explosions by testing types of apparatus and material intended for mining use, by analysing mine-air and mine-dust samples to assist the Inspectorate in their statutory duties of checking the underground conditions at mines, and by examining apparatus impounded from mines to ascertain whether it complies with the conditions of approval or whether any accident which may have occurred is due to any defect of design or maintenance.

In regard to safety lamps, the testing has covered a much wider field since the General Regulations made in 1934 prescribed a minimum standard of lighting performance for new lamps supplied to certain classes of workers, and combined this with a requirement that the lamps must be so maintained as to prevent undue deteriora-

tion in service.

The testing work is supplemented by experimental work, chiefly to determine appropriate methods of test for new classes of apparatus but also to devise means of overcoming defects found in any class

of apparatus submitted for test.

The testing of explosives for inclusion on the "Permitted" list is carried out on behalf of the Department by H.M. Inspectors of Explosives, and the testing of rescue apparatus as to its efficiency and safety when used in irrespirable atmospheres is carried out at the Doncaster Rescue Station.

Close co-operation is maintained with work on the same subjects by the Safety in Mines Research Board, through the Director of Research Stations, Professor R. V. Wheeler, and a considerable amount of research into matters affecting the testing work is carried out.

The chief items are dealt with separately in the following pages.

(a) The Testing Station, Sheffield.

The work of this Station was continued during the year under the Superintending Testing Officer, Captain C. B. Platt.

(i) Safety Lamps.—Complete type tests were carried out of three flame and 15 electric lamps for approval under the Lighting Regulations, and of one other flame and four other electric lamps, in addition to tests of modifications to lamps already approved. Examination has also been made of new lamps in various stages of development and of numerous modifications, in order to assist manufacturers in the design of improved types.

Tests of the lighting performance of various types of electric safety lamps approved under the Lighting Schedule have been made at collieries, with a view to obtaining information on the basis of which it is intended to establish standards to determine whether the lighting performance of lamps in service is secured against "an unreasonable rate or extent of deterioration" as required by No. 3 of the Lighting Regulations. The accumulation of sufficient data applicable to many different types of lamps has necessarily taken time, but the practical application of the results is now commencing.

There have been interesting developments in the use of light-weight materials in the construction of miners' electric lamps. One electric hand lamp, for instance, with an outer case of hardened rubber, instead of steel, has been approved. Such new materials are tested, before permission is given for their use, to ensure so far as possible that they will stand up satisfactorily to pit conditions, and in this instance arrangements have been made to test a proportion of the makers' output and to watch the behaviour of the cases in service.

Two lines of special investigation have been followed during the year in connexion with flame safety lamps, namely, experiments to avoid the excessive heating of these lamps, and to obtain lamp glasses of greater strength.

Perhaps the chief drawback of the new types of high candle-power flame lamp is that they become a good deal hotter than the older types, due largely to increased efficiency of fuel combustion. Many methods of cooling these lamps have been tried and the most effective yet found is the provision of auxiliary ventilation holes in the bonnet to induce an upward flow of cooling air between the bonnet and the internal parts of the lamp.

The investigations into the production of stronger flame lamp glasses have been made in collaboration with a prominent firm of glass makers, and the results of the tests carried out, which were nearing completion at the end of the year, are very promising.

(ii) Lamp Bulbs.—As in the previous year, there was a great deal of testing work concerned with the approval of electric safety lamp bulbs; further type tests were carried out, and at the end of the year the approved list comprised 91 types covering the 16 ratings at present in use.

A new type of photometer for the rapid and accurate measurement of the current consumption and light output of lamp bulbs was evolved and tested out; the new apparatus which was constructed in the Testing Station saves time and labour in dealing with the increasing amount of photometric work; a description of the apparatus was published in the Technical Press.*

The informal Consultative Committee, which is representative of the Mines Department and of the bulb and electric safety lamp manufacturers, continued to meet and to scrutinize the bulb specifications with a view to improving lighting performance whenever practicable. To ensure proper co-ordination in photo-

^{* &}quot;Light and Lighting," August, 1936.

metric measurement between the Mines Department's and the manufacturers' testing organizations represented on the Committee, periodical photometric intercheck is carried out on selected batches of bulbs, and this is supplemented by special occasional check by the National Physical Laboratory. This opportunity is again taken to thank the members of this Committee for their services.

The Testing Station has taken an active part in collaborating with the British Standards Institution and Colliery Companies in making large-scale tests in mines of certain ratings of lamp bulbs, in order to determine the possibility of specifying increased efficiency consistently with a reasonable working life. The Sub-Committee responsible for this work, under the chairmanship of Captain Platt, reported to the British Standards Institution at the end of the year, and the results will be used in revising the existing B.S. Specifica-

tions for these ratings.

The system of check-testing miners' lamp bulbs, which was inaugurated during the previous year to ensure that commercial supplies of lamp bulbs of approved types conform to the prescribed specifications, was continued. Many representative batches of bulbs were selected by an official of the Department from stocks on the open market outside the control of the bulb manufacturers. The samples were submitted to the complete official test, and it was gratifying to find that the results of all the check-tests so made showed that the samples conformed to specification.

- (iii) Electrical Shot-firing Apparatus.—Although no new types of battery or magneto exploder were submitted for approval during the year under the Explosives in Coal Mines Order, 1934, the work of check-testing five per cent. of each manufacturer's output of approved types of apparatus was continued. The results showed that in all instances the manufacturers had complied with the conditions of approval.
- (iv) Mining Bells, Relays and Telephones.—The development work regarding the design of telephone coupling units intended to permit the connexion of uncertified surface telephones to intrinsically safe underground telephone systems, to which reference was made in last year's report (page 67), resulted in the acceptance for official test of four types of coupling unit.

The experimental work on the use with bare wires of alternating current to operate intrinsically safe signalling bells, to which reference was also made on page 67 of last year's report, resulted in the institution of official tests for signalling transformers and for bells operated by alternating current. It was found that, with suitable bells, safety could be provided by the use of a condenser as the safety device, instead of the copper sleeve or non-inductive winding usually used in direct-current bells, and that ringing efficiency could be improved by the use of a small copper-oxide Westinghouse rectifier incorporated within each bell-casing. Several types of transformers and alternating-current bells have been submitted, but in most instances the tests had not been completed by the end

of the year.

During 1936 eight certificates of intrinsic safety* were issued for telephone and signalling apparatus. Lists of all certified apparatus of this character are published annually in the volume of "Regulations and Orders relating to Safety and Health."

- (v) Test and Examination of Impounded Apparatus.—A considerable amount of work was carried out on the testing and examination of lamps and other apparatus submitted by H.M. Inspectors of Mines following mining accidents. This work comprises an important section of the duties of the Station: the results of any tests which proved to be significant are given in the accounts of accidents contained in the Annual Reports of H.M. Inspectors, and in the special reports on particular accidents.
- (vi) Miscellaneous Tests.—A number of miscellaneous tests was made on behalf of the Home Office, amongst which was that of an electrically operated gas-flow meter, which was tested for intrinsic safety in relation to coke-oven gas.
- (vii) Analysis of Mine-Air and Mine-Dust Samples.—The numbers of mine-air and mine-dust samples analysed during 1936 were 3,106 and 6,577 respectively, as compared with 1,769 and 6,917 respectively in 1935. A large proportion of the mine dusts contained carbonate dust, and a more satisfactory method of estimating the carbon dioxide content of such samples was under investigation at the end of the year.

(b) The Testing Station, Buxton.

(i) Flameproof Electrical Apparatus.—The testing of the flame-proof enclosure of all types of electrical apparatus was continued during 1936 by the Testing Officer, Mr. H. Rainford, under the general supervision and direction of H.M. Electrical Inspector of Mines.

All apparatus submitted is examined as to its general design and, if this appears satisfactory, is accepted for test in inflammable gas. Additional proof of strength of structure, and, in the case of lighting or industrial heating fittings, information as to the rise in surface

temperature, is called for as considered necessary.

By arrangement with the Home Office, the Mines Department undertakes the flameproof test of electrical apparatus for general industrial use, the cost of the testing being borne, as in the case of the mining test, by the manufacturers of the apparatus. For the convenience of users, the various inflammable gases at present covered by test are divided into groups (Group I: Methane, Group II: Petroleum and Acetone Vapours, and Group III: Towns' Gas

^{*} By "intrinsic safety" is meant that the electric spark produced is (by controlling devices) rendered too feeble to be capable of igniting the most explosive mixture of firedamp and air.

and Coke-oven Gas), and the marking on all apparatus of flameproof types must indicate for which group or groups the certificate or report is valid. These arrangements were notified to manufacturers and the Technical Press in M.D. Circular No. 86.

For the mining (Group I) test, the standard test gas is methane within and without the enclosure, but where oil-immersed apparatus is concerned, hydrogen and other highly explosive gases are liable to be evolved and the most potent of these, viz., hydrogen, is therefore used within the enclosure. For the Group II test, pentane is substituted for methane, and for the Group III test, a mixture of hydrogen and methane.

The test conditions for apparatus intended to be safe against gases in Group III, which were formulated after preliminary experiment, are provisional only, being subject to revision in the light of research now in progress, and standard flameproof certificates are not yet issued for such apparatus. Favourable reports are, however, accepted by H.M. Inspectors of Factories as indicating that the apparatus, when properly installed and maintained, is flameproof as regards the gases in that group.

The concentration of the flameproof testing for both mining and industrial purposes at a single station gives advantages of economy, since apparatus can be covered for two or three groups on the result of tests in the most inflammable gas only, and also of maintaining uniformity in regard to the constructional standards required.

The heavy pressure of testing work has continued throughout 1936, and a further extension of the testing building has been necessary. During the year, 271 new certificates were issued, in addition to 40 duplicate certificates (to manufacturers desiring to market apparatus submitted for test by other firms), and 298 supplementary certificates covering modifications to apparatus previously certified. The corresponding figures for 1935 were 245, 31 and 86, respectively.

Work of an experimental nature has also been carried out to assist manufacturers in the design of flameproof devices, e.g., labyrinth shaft glands and drainage plugs for motors.

The Flameproof Certification Mark registered in the name of the Secretary for Mines (the letters FLP within the outline of a crown) which was instituted in January, 1935, to afford a ready means of identifying flameproof apparatus which has been certified by the Department, is now in general use and is widely known. Licences to use the mark have been granted to 63 firms of manufacturers in all.

Lists of the types of flameproof apparatus certified each year are published annually in the Report of H.M. Electrical Inspector of Mines, and quarterly lists are supplied to the Technical Press. In view of requests received for lists of certified apparatus, the lists for

each quarter of 1936 were placed on sale, but the demand was not sufficient to justify continuance of the experiment.

(ii) The Testing of Permitted Explosives.—During 1936, seven new compositions were tested, of which six passed and were added to the Permitted List, and one failed. In addition, one permitted explosive was re-tested on the substitution of a waxed paper wrapper for an unwaxed wrapper with a view to its issue sheathed.

On 31st December, 1936, the Permitted List, excluding explosives not manufactured in Great Britain or manufactured for export only, comprised 49 explosives permitted for general use (including 24 available "sheathed" with sodium bicarbonate or borax), and

ten low density explosives.

(c) Testing of Rescue Apparatus (Doncaster).

No new self-contained breathing apparatus was submitted for test during the year, but at the instance of the Testing Officer, practical trials were continued at certain rescue stations of a number of improvements to approved breathing apparatus, most of which were suggested as a result of the recovery operations at Gresford

Colliery.

The Advisory Committee on Rescue Work and Rescue Apparatus met during the year and certain of their recommendations were communicated to Rescue Station Authorities in the form of Mine Rescue Memorandum No. 11. This dealt with (1) the fitting of a new type of pressure gauge to the "Proto" breathing apparatus and other points connected with the apparatus, and (2) the question of oxygen pressure in the cylinders of the "Meco" and "Meco-Briggs" breathing apparatus in relation to the safe period of use.

Mr. P. L. Collinson, B.Sc., was Testing Officer from October, 1933, until August, 1936, when he resigned from the Inspectorate to take up the Chair of Mining at University College, Nottingham. Mr. Collinson has been succeeded as Testing Officer by Mr. W. F. Richardson who has been appointed a member of the Committee.

In view of Mr. Collinson's exceptional experience in, and knowledge of, rescue work, arrangements have been made for him to

continue to serve on the Committee.

During the year a Conference of Rescue Station Superintendents was held at Sheffield, and attended by fifty Superintendents and Instructors from the Rescue Stations in all parts of Great Britain. The Conference was a distinct success and it is proposed to hold another during the present year.

9. Training of Boys.

The number of centres at which safety classes for pit boys were held during the Session 1936–37, and the number of boys who attended are summarised in the table on page 71.

Safety Classes for Colliery Boys Session 1936–37.

Inspection Division.	No. of Centres.	No. of Boys Enrolled.	No. of Badges or Certificates awarded.
Scotland	55 98 54 53 13 21 17	2,582 4,099 2,355 1,909 1,255 810 307 263	1,567 2,303 1,036 1,114 742 107 157 50

In South Wales, where for the first time the classes were organised chiefly by the local Education Committees in association with the South Wales and Monmouthshire Safety in Mines Research Committee, there has been a large increase in the number of centres opened and of boys who have attended; and a "safety badge" for the coalfield has been designed and put to service. Classes were freshly started by the Education Committees in Cumberland and Staffordshire.

An interesting outcome of a successful safety class for boys at a colliery in Yorkshire has been the formation of a class for men. The instruction has taken the form of lectures of an hour's duration, illustrated by models and experiments, followed by discussion for a similar period. The success of the class may be gauged by the fact that enrolments numbered 100, but the number attending reached 300. It is hoped that this class will be the forerunner of others elsewhere.

It is well to emphasize that full benefits will not be gained from the boys' classes unless they are regarded as an adjunct to careful training and systematic supervision of the boys at the mines, and this is being increasingly recognised by colliery managements. In some cases supervision of young boys is in the hands of Safety Officers. Elsewhere, as at Ackton Hall Colliery in Yorkshire, boys commencing work are trained under an experienced deputy in a specially selected quiet district before being passed for work elsewhere in the mine.

A statistical summary showing the high incidence of accidents to boys compared with those to persons of all ages during the past five years was widely circulated during the year and was the subject of discussion in several of the coalfields. In addition, a Safety First poster has been prepared for display at mines, in the form of an appeal to older mine workers always to lend a helping hand to the

young worker. Some thousands of copies of the poster have been distributed for display at the collieries with a personal letter from the Chief Inspector of Mines.

10. STATUTORY EXAMINATIONS FOR COLLIERY OFFICIALS.

(a) Board for Mining Examinations.

An irreparable loss was suffered on the 14th March, 1936, by the death of Professor J. S. Haldane, who had served on the Board since its inception in 1912. As one of the two members "eminent in mining and scientific knowledge" provided for by the constitution of the Board, Professor Haldane gave services and advice which were of the greatest value. Professor J. A. S. Ritson was appointed in June, 1936, to succeed Professor Haldane.

The decline in the number of candidates presenting themselves for examination for Certificates of Competency has been a little further accentuated during the year, 493 candidates attending as against 518 in 1935. The decline is apparent also in the attendances of candidates for Mine Surveyors' Certificates, the number falling from 177 in 1935 to 151 in 1936, but that reduction has to some extent been off-set by an improvement in the percentage of passes, which, at a little over 25 per cent., is better than for many years past.

Entrants for First Class Certificates numbered 243, of whom 53 qualified. The percentage of $21\cdot8$ compares unfavourably with 24·6 in 1935. On the other hand, there was an improvement in the percentage of passes of Second Class Candidates. Of the 250 entrants, 68 passed or $27\cdot2$ per cent. compared with $23\cdot7$ per cent. in the previous year.

During the year, six candidates obtained sufficient marks to enable them to take advantage of the arrangement by which candidates are allowed to be re-examined in their weak subject, whether that be the oral examination or one or two (but not more than two) of the written papers, without taking the whole of the examination again. Of these, four earned the right at the May examination and three of them qualified for a certificate in November. The other two are eligible for re-examination in May, 1937. In November, 1935, 11 candidates had qualified for re-examination in 1936, and all were successful in obtaining certificates.

A statistical analysis of the attendances and the results of the two examinations in 1936 are given in Table 61, and the results of previous examinations in Table 62 of Appendix A.

Copies of the questions set at the written examinations are on sale and are obtainable through the usual channels. Copies of the Central Examiner's Reports and of the Annual Report of the Board to the Secretary for Mines were issued to the Technical Press and to teaching institutions throughout the country.

The Mining Examinations (Certificates of Competency) Rules of the 21st June, 1935, were referred to at length in the last Report. It is satisfactory to record that a progressive number of students who were under the age of 17 on the 21st June, 1935, are now registering with the Board their certificates of preliminary education and are thus qualifying themselves in that respect to proceed at a later date to the statutory examinations for Managers' and Under-Managers' Certificates.

(b) Examinations for Firemen's and Shotfirers' Certificates.

Examinations for Firemen's and Shotfirers' Certificates are held in mining districts by Local Education Authorities and Mining Institutions approved by the Secretary for Mines under the provisions of Section 15 of the Coal Mines Act, 1911, and in accordance with general directions which have been laid down. Notice of every examination is required to be given in advance to H.M. Inspectors of Mines, who visit the examinations from time to time in order to satisfy themselves that they are properly conducted and that a reasonable uniformity of standard is maintained. An analysis of the results of the Examinations held in 1936 will be found in Table 60 of Appendix A.

11. Plans of Abandoned Mines.

The Department has prepared and is doing its utmost to extend and keep up to date a Catalogue of Plans of Abandoned Mines to assist those immediately responsible for safety in mines. The Official Catalogue is published in five volumes and Supplements are published annually. The Supplement for 1936 contains references to nearly 300 plans deposited with or presented to the Mines Department. One of the many sets of plans presented during the year were the Main Colliery plans, showing extensive workings in and around the Neath (South Wales) district, and the Secretary for Mines desires to record his thanks to the liquidator of the Company for those plans. He also wishes to thank Messrs. Fisher and Baker for plans showing workings in South Staffordshire, and others whose gifts have been instrumental in enhancing the value of the Catalogue and Supplements.

During the year records were made of 292 plans in private ownership. Over 100 plans of workings in South Staffordshire were recorded by permission of Messrs. S. Chambers and H. D. Poole, and 140 plans showing workings in South Wales were recorded by permission of Mr. A. G. Fleming and the Executors of the late Mr. W. E. Morgan. The Secretary for Mines is grateful for the facilities given.

Frequent inspections of deposited plans are made by persons whose primary concern is to avoid danger arising from the proximity

of old workings to present-day workings, and the Department is anxious to encourage such inspections. Plans which are open to inspection may be seen by appointment at the Mines Department between 10.30 and 12.30 and between 2.30 and 4.30 (Saturdays excepted) or by special arrangement at the offices of the Divisional Inspectors of Mines. No charge is made for inspection. If copies are required they can be prepared under the supervision of a certified mining surveyor and supplied at a reasonable cost.

TWENTY-NINTH ANNUAL REPORT OF H.M. CHIEF INSPECTOR OF MINES.

CONTENTS.

	PAGE
Table of Inspection Divisions (Corrected to August, 1937)	76
Mines Under the Coal Mines Act, 1911 :—	
Inspection Divisions and Inspectorate	79
Number of Coal Mines at Work and Number of Inspections made	80
Persons Employed and Accidents	80
Accidents:—	
Falls of Ground	81
Underground Haulage Accidents	83
Miscellaneous Underground Accidents:	
(a) Explosives	85
(b) Suffocation by Natural Gases	86
(c) Underground Fires	87
(d) Irruptions of Water	87
(e) Electricity	87
(f) Machinery	88
(g) Other Accidents	88
Explosions,	89
Shaft Accidents	91
Surface Accidents	93
General:—	
Inspections on behalf of Workmen	95
Protective Equipment	95
Explosives	96
Septicæmia or Blood-poisoning	97
Edward Medal	98
Conclusion	98
Appendices:—	
I.—Papers read or Lectures given by H.M. Inspectors of Mines	100
II.—Divisional Summary of Non-fatal Accidents disabling the	
person injured for more than three days	102

TABLE OF INSPECTION DIVISIONS Corrected to August, 1937.

		_	_	-	\neg
	M.Sc.				
I. WALKER, C.B.E., LL.D.	H. WYNNE, C.B.E., B.Sc.	B. HORSLEY, O.B.E.	HAKVEY, M.Sc., B. Eng.	. FISHER, M.D., B.Ch.	. HAY, O.B.E.
11	IZ.	A	Ξ.	×	S)
S	H	٦	5	*S	Д
:	:	:	:	:	:
:	:	:	:	:	:
M. Chief Inspector of Mines	I.M. Deputy Chief Inspectors of Mines	H.M. Electrical Inspector of Mines	f. Deputy Electrical Inspector of Mines	1. Medical Inspector of Mines	pector for Special Duties

Street,
Stanley S.W.1.
, Dean
Department Millbank, I
Mines I

Inspectors of Tolographic Address of Tolographic Address of Tolographic Address of Divisions on Areas of Tolographic Address of Divisions on T. Ashbey 51, Modelli e Wile Wile Wile Wile Wile Wile Wil	Inspectors of Horses in Mines,	A. McArthur, 8, Hyr.d-land Avenue, Gies-gow, W. (see also Division 2).	R. L. Layfield, M.B.F. Laburuum Cottage, Gilesgate Moor, Durham, Stubley, 5, Chelsea Grove, New- castle-or-Tyne, 4. A. McArthur (see also Division 1).
Northern Division, com- Telgapathic Address Sanior Inspectors.	Sub-Inspectors of Quarries.	N. Gillies, 37, Milton Road West, Dudd- ingston, Portobello, Midlothian.	
Northern Division, com- Telgapathic Address Sanior Inspectors.	Sub-Inspectors of Mines.	A McCall, 60, Sydney Terrace, Graigen- tinny, Ediburgh, 7, Frestwick Road, Ayr. V.Dunbar, Hoimles, Coatbridge Road, Bargoddie, Lanark- side Avenne, Rosyth, Dunfermine,	W. Brown, M.B.E. 225, Osborne Road, West Jesmond, New- Goodin, Penrith House, Cockton Hill Road, Bishop Auck- Iland, I.S. Jobing, 2, Wood View, Shine Liffe, Durham, 198 Bettty Avenue, Jes- mond, Newcastle- on-Tyne, 2. Purley Gardens, Kenton Lane, Gos- forth, Newcastle- on-Tyne, 3. Purley Gardens, Mcd. Minas: R. Butley, 7, Lonsdale Compresse, 5t, Bees, Compersate
Names and Areas of Piegraphone Inspectors. Senior and Telephone Number. Scotland. Scotland. Street, Edinburgh, 3. Stoker, 136, Brownspising the whole of Street, Edinburgh, 3. Stoker, 136, Brownspising the whole of Street, Edinburgh, 3. Stoker, 136, Brownspising the whole of Street, Edinburgh, 3. Private address: 39 Braid Fam Road, Edinburgh, 10. Edinburg	Junior Inspectors.	*P. G. Dominy, M.C., B.Sc., Transylaw, Duffermine J. A. Grove, 32, Forres- ter Road, Corstor- Phine, Edinburgh, 12, "G. Hoyle, B.A., 21, Netherriew Road, S.4. I vacancy. Electrical: R. Crawford, Lockharton Cres. Cent, Edinburgh, 11, Cockharton Cres.	*W. Wainwright, Hill- side, North End, Durham. *F. Richardson, *T. A. Rogers, "Sumy- side House," 56 High St., Gosiorth, Newastleon-Une, 3 T. A. Jones, 37 Hawthorn Road, Gosforth, Newastle, on Tyne, 3. H. S. fe p he n son, Westview, Fieldhouse Terrace, Durham. Electrical: R. Crawford (see also Division 1).
Sootland Divisions. Sootland Division, comprising the whole of Sootland. Northern Division, comprising Northumberland, Durham, Cumberland, Durham, Cumberland, Riding of Yorkshire, the detached part of Lancascambe Bay and the Isle of Man.	Senior Inspectors,		T. I. McBride, B.Sc., Benton Cottage, Long Benton, New- castle-on-Tyne. *W. B. Brown, Mil- bank, Western Hill, Durham.
, vi	Inspectors in charge, Telegraphic Address and Telephone Number.	T. Ashley, 51, Melville Street, Edinburgh, 5. (Mines Inspector, Edinburgh, 27358.) Private address: 99, Eraid Farm Road, Edinburgh, 78006.) (Edinburgh 53008.)	W. J. Charlton, O.B.E., Crown Buildings, 63. Westgate Road, Newcastle-on-Tyne, I. (Mines Inspector, Newcastle-on-Tyne,) (Newcastle-on-Tyne, Newcastle-on-Tyne, Newcas
No. of Divi- sion.	-	Scotland. Division, compressing the whole of Scotland.	Northern Division, comprising Northumberland, Durham, Cumberland, Westmorland, the North Riding of Yorkshie, the detached part of Lancashire north of More-cambe Bay and the Isle of Man.
	No. of Divi- sion.	H	ed .

G. H. Mould, "Farlands," Bar Crescent, Doncaster Road, Wakefield. R. Baxter (see also Division 4).	R. Baxter, 54, Wilson Road, Sheffield, 11 (see also Division 3).	J. Evans (see also Division 8).
G. Holden, Bleakholt, Wood Lane, Malin Bridge, Sheffield (see also Division 4).	E. Laundon, "Charn-wood," Leicester R oa d, G r ob y, Leicester. G. Holden (see also Division 3).	Rhys Williams, M.B.E., 30, Friars Avenue, Bangor. O. Jones, 91, Ashworth St., Rochdale.
Oxford *F. E. Stone, May B.S., "33, *A. Clarke, 83, Hawks- Road, "B.S., T. H. Stanton, M.C., Avenue, S. T. Shaw, "Arozid," House Gels, II. "Sod, Barnsky." T. Shaw, "Arozid," Bar Crescent, Donesid, II. "Shaw, "Arozid," Bar Crescent, Doneside, "Axbolme Road, Donesider, "Axbolme Road, "Axbolme Road," "Ax	F. Shooter, 132, Ashby Road, Burton-on-Trent. R. A. Ridsdale, 183, Valley Road, Sher-wood, Nottingham, W. Wh if e house, "Acuba," Little Moor, Newbold, Chesterfield.	J. Duncan, 5, Eaton Bank, Accington. *W. Roberts, 37, Birley, Sirect, Newton-le-Willon, "Oak-dene," 36, Downall Green Road, Bryn, Wiga. Mei. Mines and Quarries: 1 vacancy.
G. Cook, 13, Lidgett "T. Green, 18, Oxford Park Road, Round" "C. W. Scott, B.Sc., "Charmwood," 33, Auckland Road, Postafield, 7. Special Road, Sheffield, 7. Special Road, Sheffield, 7. Special Road, Sheffield, 7. Special Road, Sheffield, 7. Special Road, Special Road, Sheffield, 11. Nature House Road, Sheffield, 11. Nature Road, Doncaster. Electrical Special Road, Sheffield, 11. Cowan, 30, Abbeydale Park Rise, Cotey Rise, Sheffield (see also Divisions 4 & 5).	A.L. Flint, 30, Clarence Road, Chesterfield *T. E. Pichering, Lang- ley, Garth Road, Mansfield. Cray, B.Sc., 66, Bridgtord Road, West Bridgford, Nottingham. W. Widdas, 4, North Parada, Derby. Electrical. J. Cowan (see also Division 3).	*H. R. Houston, "The Bungalow," Hall Lane, Marylebone, Wigan. *I. C. A. Benson, 2, Civeden Koad, Hough Green, Chester. G. Jenkins, "Hill-crest," 29, Lancaster Road, Newcastle, 1 vacaney. Electrical: J. Cowan See also Division 3).
*	A. H. Stele, 119, Melton Road, West Bridgford, Nottingham. *J. Hall, 866, Whirlow- dale Road, Sheffield, 11.	H.S. S. Scott, c.o H.M. Divisional Inspector of Mines, Manchester, *D. Co a tos woor b, "Sumerfield," 386, Walk de n Road, Worsley, Manches- ter.
H.J.Humphrys,D.S.O., M.C., Lancaster House, West Laithe Gate, Doncaster. (Mines Inspector, Doncaster.) (Doncaster.) (Doncaster.) 119, Thorne Road, Doncaster. (Doncaster.)	J. R. Felton, O.B.E., Albion Chamters, King Street, Notting- ham. (Mines Inspector, Nottingham 49916.) Pring address: Wearlivorth Dove- dale Road, Edwalton Hill, West Bridgord, Nottingham 8063.)	E. H. Fruzer, O.B.E. M.Sc., Prudential Assume Budidings, 78, King Street, 78, King Street, 78, King Street, 78 Marchester, 2. (Wines Inspector, Manchester, 2. (Wines Inspector, Manchester, 2.) Private address, 2, Raynham Avenne, Dickbury, Man- chester, 20. (Didsbury, 2911.)
Yorkshire Division comprising East and West Ridings of Yorkshire, (except that portion of the West Riding which was transferred for administrative purposes from Lancashire by the Local Government Act, 1888).	North Midland Division, comprising the Counties of Derby, Leicester, Lincoln, Nottingham, Huntingdon, Northampton, Rutland and Oxford.	North Western Division, comprising part of Lau- cashire (manch), somuch of the County as is not included in No. 2 Divi- sion) Cheshire, that part of the County of Stafford lying to the North of the Road from Uttoseter through Bramshall Field and Miwich to Stone and thence through North ton Bridge, Eccleshall, Croxton, Hookgate and Croxton, Hookgate and Croxton, Hookgate and Drayton, Anglesey, Casunaryon, Denbigh, Flint, Merioneth, and Montgomery.
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* Trained in the use of rescue apparatus.

TABLE OF INSPECTION DIVISIONS Corrected to August, 1937-continued.

Inspectors of Horses in Mines,	T. L. Evans, 1, Kelvin Road, Cardiff. D. R. Thomas (see also Division 7).	D. R. Thomas, 24, Dunraven Road, Sketty, Swansea, (see also Division 6).	J. Evans, 467, Bel- chers Lane, Little Brounwich, Bir- minghan, 9. (see also Division 5).
Sub-Inspectors of Quarries,			W. Morrow, "Afton," 126. Cambridge Road, North Harrow, Middlesex. M. A. Cheshire, 132, Cartland Road Strichley, Birming- ham.
Sub-Inspectors of Mines.	*J. R. Jenkins, "Nyth- la," Newport Road, Bassaleg, Mon. R. J. Bennett, Arosta, Kewick Avenue Roath Park, Cardiff W. E. Thomas, 24, Kenilworth Road, Newport, Mon. E. A. Owen, 20, Can- ada Road, Cardiff.	*J. Hughes, 6, Grange Street, Port Talbot. *J. K. Bowen, Dulais, Glasman, Bridgend, Glasman, Bridgend, T. J. Evans, Bryn-yr- Awel, Coppa Road, Pontardulais.	*W. Price, 26, Sir John's Road, Selly Park, Birmingham, G. H. Sutton, 176, Higham Lane, Nun- eaton. R. Clough, "Brance- peth," Linton Road, Penn, Wolverhamp- ton.
Junior Inspectors.	*G. N. Scott, M. Se. 2, Cyn. Coed Avenue, Cyn. Coed Avenue, T. B. Bassett, 50, Heatthied Road, The Heatth, Cardiff, *H. G. Madley, "Gras- mere," Chepstow, Road, Newport, Mon. Read, Newport, Aleatrical: R. Robinson, 44, The Parade, Barry, Glam See also Divisions 7 & 8).	W. J. Owen, "Ochil- tree," Cowbridge Rad, Bridgend, "Tew-enol," Cimla Road, Noath, "Brootlyn," Glamnor Park Road, Glamnor Park Road, Etchriad: R. Robinson (see also Division 6).	*T. D. Davies, 639, Walsall Road, Great Barr, Birmingham F.N. Sidall, 82, New- bridge Hill, Bath. Mcf. Mrines Quarries: R. King, II, Vic- toria Road, St. Austell, Cornwall. Electrical: R. Robinson (see also Division 6).
Senior Inspectors.	E. S. Rees, The White House, The Green, Llandaff, Cardiff. P. T. Jeaniss, "Bsyn- coed," Woodville Road, Newport, Mon.	*R. Yates, D.S.O., M.C. 45, Queen's Road, Sketty, Swansea.	*H. C. W. Roberts, M. C., B. Sc., High Croft, Old Chester Road, Castle Bromwich, Birmingham.
Inspectors in charge, Telegraphic Address and Telephone Number.	J. M. Carey, O.B.E., Cardiff. (Mines Inspector, Cardiff.) (Cardiff 5995.) Private address: Trehedyn, Peterston- super-Ely, nr. Cardiff. (Peterston 7.)	*P. S. Lea, Dryslwyn House, De la Beche Street, Swansea. (Mines Inspector, Swansea.) (Swansea 2367.) *Private address: "Ladbury, Penry, Pe	*E. Rowley, Empire House, Great Charles Street, Birminghan, Mines Inspector, Birmingham.) (Central 6016.) Private address: 14. Duchess Road, Edgboston, Edgboston 0553.)
Names and Areas of Divisions.	Division, comprising the County of Monmouth, part of the Counties of Glamorgan and Brecont, the Counties of Radnor, Cardigan and Gloucester (West of the River Severn).	Swansea Division, compris- ing the Counties of Car- marthen, Pembroke and part of the Counties of Clamorgan and Brecon Clamorgan and Brecon these Counties as is not included in No. 6 Division).	Midland and Southern Divi- gin, comprising so much of the County of Staff ord as is not included in the North Western Division, Bedford, Berks, Buckingham, Cambridge, Cornwall, Devon, Dorset, Essex, Glouester, georpt that part West of the Condon, Middlesex, Nor- tolk, Salop, Somerset, Suffolk, Surrey, Sussex, Warwick, Wilts and Worcester.
No. of Divi- sion.	Φ	1	œ ·

* Trained in the use of rescue apparatus.

† Including the Parishes of Aberdare, Rhondda, Llantrisant, Coychurch Higher, Pencoed, Coychurch Lower, Llan-Gan, Colwinston, Llanfow, St. Donats, Llyswen, Llandefalle, Llan-y-wern, Llanfamlach, Llanfrynach, Cantref, Penderyn and all Parishes to the East thereof.

TWENTY-NINTH ANNUAL REPORT OF H.M. CHIEF INSPECTOR OF MINES.

Mines Department,

Dean Stanley Street,

Millbank, London, S.W.1.

28th May, 1937.

Captain Harry Crookshank, M.P., Secretary for Mines.

Sir,

In accordance with the requirements of Section 100 of the Coal Mines Act, 1911, I have the honour to submit the following Report for the year 1936 in regard to mines under that Act. My Report under the Metalliferous Mines Regulations Acts and the Quarries Act will be submitted and published separately.

INSPECTION DIVISIONS AND INSPECTORATE.

There has been no alteration in the Inspection Divisions, of which a complete list is given on pages 76 to 78, together with the names and addresses of the Inspectors appointed to each Division.

I deeply regret to record the death, during the year, of Mr. E. Griffiths, Sub-Inspector of Coal Mines in the Swansea Division.

Mr. P. L. Collinson, Junior Inspector in the Yorkshire Division, resigned from the Inspectorate in order to take up the post of Professor of Mining in the University of Nottingham. Mr. Collinson also served as Rescue Apparatus Testing Officer and was a member of the Advisory Committee on Rescue Work and Rescue Apparatus; in this capacity, he spent some strenuous months and did most valuable work in training the Rescue Brigades (and later accompanying them) concerned in the exploration and erection of stoppings in Gresford Colliery. The good wishes of his former colleagues go with him in his new post.

Following are the changes in the staff during the year:—

Transfer.

Mr. G. H. Sutton, Sub-Inspector, North Midland Division, to the Midland and Southern Division.

Retirements.

Mr. H. Morgan, Sub-Inspector, Midland and Southern Division, on attaining the age limit.

Mr. S. Thomas, Sub-Inspector, Midland and Southern Division, owing to ill-health.

Appointments.

Mr. W. Armour, Temporary Inspector for Overtime Investigation, at present working in the Scotland Division.

Mr. G. Jenkins, Junior Inspector, to the North Western Division.

Mr. R. N. Forster, Sub-Inspector, to the Northern Division.

Mr. W. Whitehouse, Sub-Inspector, to the North Midland Division.

Mr. M. A. Cheshire, Sub-Inspector of Quarries, to Midland and Southern Division.

During the year there were in Great Britain 2,080 mines working under the Coal Mines Act. The total number of inspections made at these mines, inclusive of inspections made by the Inspectors of Horses, was 23,853. Of these inspections 18,545 were made underground, 2,673 being made on afternoon and night shifts. One thousand, three hundred and one mines were inspected throughout, that is, in every part.

As in former years, several of the Inspectors read papers or gave lectures in addition to carrying out their work of inspection. A list of the papers read and of the lectures given will be found in Appendix I.

PERSONS EMPLOYED AND ACCIDENTS.

At mines under the Coal Mines Act, 1911 (mines of coal, stratified ironstone, shale and fireclay) 172,154 persons were, on the average, employed at the surface, and 605,720 persons underground. The number of persons killed by accidents at these mines in 1936 was 790—the lowest figure on record for a full year—and 3,117 were seriously injured. The number of persons who were injured and disabled for more than three days was 135,968.

The following table shows the number of persons killed and injured by serious accidents per 100,000 manshifts worked underground at mines under the Coal Mines Act, from various causes in each of the Mines Inspection Divisions during 1936:—

Division.	Explo- sions	Falls of Roof	In	Under- ground	Miscel- laneous	Total	Underg	round.
Division.	of Fire- damp.	and Sides.	Shafts.	Haul- age.	Under- ground.	1936	1935	1934
1. Scotland	0.25	0.94	0.14	0.51	0.59	2.43	2.86	2.77
2. Northern	0.02	0.98	0.03	0.57	0.54	2.14	2.52	2.30
3. Yorkshire	0.24	1.05	0.05	0.58	0.27	2.19	2.36	2.01
4. NorthMidland	0.02	1.69	0.07	0.53	0.56	2.87	2.63	3.05
5. NorthWestern	0.01	1.07	0.03	0.57	0.44	2.12	2.20	3.62
6. Cardiff and								
Forest of								
Dean	0.01	1.15		0.57	0.41	$2 \cdot 14$	$2 \cdot 21$	2.39
7. Swansea	0.05	1.27	0.14	0.99	0.30	2.75	2.81	$2 \cdot 55$
8. Midland and								
Southern		1.19	0.02	0.62	0.34	2.17	2.53	2.31
				0 =0	0.45	0.01	2 10	O EN
All Divisions	0.09	1.13	0.05	0.59	0.45	2.31	2.49	2.57

By serious accidents is meant those which, because of their nature, are required to be reported to H.M. Divisional Inspectors of Mines at the time of their occurrence. They include (a) accidents causing fracture of the head or limbs, or dislocation of limbs or any other serious personal injury and (b) accidents caused by explosion of gas or dust, or by any explosive, or by electricity or by overwinding and causing any personal injury whatever.

In addition to these immediately reportable accidents, a Return for each mine of all accidents which prevent a workman from following his employment for more than three days, is required to be forwarded to H.M. Divisional Inspectors of Mines on or before 21st January each year, and the statistics of these accidents are shown in Appendix II.

The accident rates per thousand persons employed above and below ground at mines under the Coal Mines Act for the whole country in 1934, 1935 and 1936 were:—

			1936.	1935.	1934.
Killed			 1.02	1.10	1.35
Killed and	seriously	injured	 $5 \cdot 02$	$5 \cdot 28$	5.38

The accident rates per 100,000 man-shifts worked above and below ground at mines under the Coal Mines Act for the whole country were:—

	1936.	1935.	1934.
Killed	 0.39	0.43	0.53
Killed and seriously injured	 1.92	2.06	2.13

ACCIDENTS.

Of the 3,538 persons killed and seriously injured underground during the year, 1,729, or 49 per cent., were killed or seriously injured by falls of ground; 907, or 26 per cent., by haulage accidents; 134, or 4 per cent., by explosions; 80, or 2 per cent., by shaft accidents; and 688, or 19 per cent., by various miscellaneous causes.

FALLS OF GROUND.

Three hundred and eighty persons were killed by falls of ground and 1,349 seriously injured from the same cause during the year. Compared with the year 1935, there were decreases of 78 in the number killed and 93 in the number seriously injured. The total number of persons disabled for more than three days, including those reported to the Divisional Inspectors as having been seriously injured, was 47,535, an increase of 379 compared with the corresponding figure for 1935.

The table on page 82 shows the number of persons killed and seriously injured per 100,000 man-shifts worked underground from falls occurring at the face and on roads in the several Inspection

Divisions, also the total rate from this cause for Great Britain in 1934, 1935 and 1936.

	At the face.		On Roads.				Tatala Danasa killada a			
Division.	No. of Persons killed and serious- ly injured. Rate per 100,000 man- shifts worked below- ground.	Whilst repairing or enlarging.		Whilst otherwise working or passing.		Total: Persons killed and seriously injured.				
		Persons killed and seriously injured	Rate per 100,000 man- shifts worked	Persons killed and seriously injured	Rate per 100,000 man- shifts worked below- ground.	No. in 1936.	Rate per 100,000 manshifts worked below- ground			
			below- ground.				1936.	1935.	1934.	
1. Scotland 2. Northern 3. Yorkshire 4. N. Midland 5. N. Western 6. Cardiff and Forest of	159 249 208 244 156	0·78 0·74 0·83 1·44 0·88	20 44 30 26 19	0·10 0·13 0·12 0·15 0·11	13 38 26 16 15	0.06 0.11 0.10 0.10 0.08	192 331 264 286 190	0.94 0.98 1.05 1.69 1.07	1·27 1·17 1·17 1·61 1·13	1·18 0·97 1·06 1·72 1·15
Dean 7. Swansea 8. Midland and Southern	109	0.91	16 16	0·15 0·16 0·15	17 19 7	0.09	123 132	1.15	1·23 1·55 1·25	1·41 1·23 1·11
Total in 1936	1,379	0.90	199	0.13	151	0.10	1,729	1 · 13		_
Total in 1935	1,536	1.02	202	0 · 14	162	0 · 11	1,900		1.27	-
Total in 1934	1,419	0.93	191	0 · 13	208	0 • 14	1,818		-	1.20

Accidents from falls accounted for 49 per cent. of all the serious accidents occurring underground during the year. From this statement it is evident that the work of overcoming the causes of such accidents is still the most important and pressing to which the energies of everyone concerned can be directed.

The rate per 100,000 man-shifts worked underground for persons killed and seriously injured from falls during the year varied from 0.94 in the Scotland Division to 1.69 in the North Midland Division; the average rate for all the coalfields was 1.13. In every Division, except the North Midland, the rate was lower than that for the previous year.

On the same basis, the average rates for the several Divisions during the years 1930–1936 were as follows:—Scotland, 1·14; Northern, 0·98; Yorkshire, 1·11; North Midland, 1·56; North Western, 1·17; Cardiff and Forest of Dean, 1·35; Swansea, 1·37; Midland and Southern 1·17.

From these figures it will be noticed that the North Midland Division has the highest rate over the seven years, a result which calls for comment.

Mr. Felton in his Reports on the North Midland Division for past years has called attention to this unsatisfactory position and does so again this year. He has suggested that the high rate might be due to the rapid turn-over from hand to machine-mining; that however does not seem to be a valid explanation for, in the Yorkshire Division, in which the natural conditions are certainly no better

11

than, if even as good as, those in the North Midland Division, machine-mining has made just as quick an advance but has *not* been accompanied by an almost constantly increasing fatal and serious accident rate. On the contrary, the rate, 1.05 for the Yorkshire Division in 1936 was the lowest for that Division in any year since 1930, except 1931, when it was 1.01.

Evidently an extra effort is required from all concerned in the North Midland Division and Managers in that Division and generally throughout the Country should include in their requirements, made under Section 50 (4) of the Act, an increased use of bars (planks, flats, straps) preferably of steel; a maximum distance beyond which the coal-face may not be taken beyond the packs; and, instead of leaving workmen to decide what additional supports should be set in abnormal conditions, should lay down the method of support to be adopted in such cases.

In addition, in view of the increased danger which exists at road-heads, special requirements for such places should be set out. And, having done all these things, there should be appointed sufficient competent officials to see that the various requirements are understood and systematically observed.

UNDERGROUND HAULAGE ACCIDENTS.

The following table shows the accidents due to haulage operations underground during the year:—

	Fatal and Non-fatal Accidents reported to Inspectors.						All Non-fatal Accidents disabling for more than 3 days in 1936.*		
ST CONTINUES	No. of Separate Accidents.			No. of Persons Killed and Seriously Injured.			No. of Separ- ate	No. of Persons	
	1936.	1935.	1934.	1936.	1935.	1934.	Acci- dents.	Injured.	
While engaged in haulage operations While walking inbye or outbye to or	685	705	668	689	707	677	33.588	33,649	
from their work Miscellaneous	70 142	77 157	61 141	75 143	79 163	62 147			
Total	897	939	870	907	949	886	33,588	33,649	

^{*} The corresponding figures for 1935 were 34,294 accidents and 34,352 persons injured and for 1934, 33,668 accidents and 33,733 persons injured.

The number of separate accidents reported to the Inspectors is 27 per cent. of all the accidents which occurred underground during the year.

The rate per 100,000 man-shifts worked underground for 1936 was lower than that for 1935 in the Scotland, Northern, Yorkshire, North Midland and Midland and Southern Divisions and higher in the other three Divisions.

The Swansea Division has by far the highest annual average rate for this class of accident over the past seven years, namely 0.97; the next highest, 0.70, is in the Midland and Southern Division. The comparable rates for the other Divisions over this period of seven years are:—Scotland, 0.55; North Western, 0.55; Cardiff and Forest of Dean, 0.60; Northern, 0.61; Yorkshire, 0.64; North Midland, 0.64.

Mr. Ashley gives details of some of the accidents which occurred in the Swansea Division and it is apparent from his remarks that neither the management nor the workmen are free from blame; for example:—"Derailments were the primary cause of 30 per cent. of all the mechanical haulage accidents . . ." He then enumerates the defects in trams which contribute to derailments as follows:—"Flats on wheels"; bent axles; and "insecurely attached or broken brackets or hangers," and goes on to say "The number of derailments would also be lessened by the use of heavier section rails and by keeping the floor, especially the space between the rails and the sides, free from rubbish, which is so apt to foul the track when disturbed by the passing of men or horses."

Mr. Ashley also states that of 11 fatal accidents on mechanical haulage roads, "six could have been avoided if due heed had been paid to the Coal Mines Act, three of them being due to persons walking outbye before the end of the shift whilst the haulage was in motion, two by persons attempting to ride on journeys at the end of the shift and one by riding during shunting operations in a double parting" and that "a little more care might have prevented three of the others."

In general, the Divisional Inspectors are agreed that a high percentage—65 to 85—of haulage accidents could be avoided by one means or another. For example, Mr. Frazer states that in the Scotland Division "slightly more than three quarters of the accidents were avoidable by the use of ordinary common sense, better haulage gear or more commodious roads."

Mr. Davies says that in the Northern Division "Seventy-eight per cent. of the accidents might have been averted by compliance with the rules and the exercise of ordinary care." Mr. Felton says the same thing in different words, namely, "A very large proportion of all underground haulage accidents might be prevented by the proper maintenance and use of safety devices and the exercise of reasonable care."

Mr. Rowley gives a detailed analysis of the 84 per cent. of haulage accidents in the Midland and Southern Division which he considered to have been avoidable. A quarter of these he assigns to the "human element" and the remainder to various causes which, in

some, may truthfully be described as inadequate facilities or faulty conditions.

The fact is there has been very little variation in the death rate per 1,000 persons employed from haulage accidents since 1873; the figure for that year was 0.35 and for 1936, 0.27. The annual average rate for the years 1873–1882 was 0.32 and for the years 1927–1936, 0.28. There can be little hope of improvement unless the conditions under which haulage operations are carried on are improved; unless stop-blocks and other similar apparatus are provided and maintained in working order; unless persons are prohibited and actually prevented from travelling on haulage roads whilst the haulage is in motion; unless heavier and better rail-tracks are laid and unless stricter supervision is exercised by the management.

MISCELLANEOUS UNDERGROUND ACCIDENTS.

Ninety-six persons were killed and 592 reported to the Divisional Inspectors as having been injured from various miscellaneous causes during the year. These causes were:—

(a) Explosives.—Eleven persons were killed and 199 injured by accidents connected with the use of explosives, as shown in the Table below:—

	No. of Fatal	No. of	Non-fatal Accidents.		
Character or Cause.	Acci- dents.	Persons Killed.	No. of Separate Accidents.	No. of Persons Injured.	
While conveying explosives While handling explosives While charging or stemming—	_		1 9	10	
From sparks of match, lamp, or candle When using wooden, brass or copper			3	3	
tools			1	2	
With squibs or straws With safety fuse	-		3	3	
With electric fuse Delayed explosions			4	4	
fire While boring or working near unex-	1	1		_	
ploded remnants left by incomplete detonation of the charge Blows from stone or coal projected by shots when persons had not taken	1	1	8	14	
sufficient shelter Sundries and unknown	6 3	6 3	123 28	131 31	
Total in 1936	11	11	180	199	
Total in 1935	15	16	191	217	

From the above table it will be seen that more than half the fatal and 66 per cent. of the non-fatal accidents were due to blows from stone or coal projected by shots when the persons killed or injured had not taken proper shelter. Such cases are due to foolhardiness or negligence. Given stricter supervision and proper discipline, nearly all accidents in connexion with the use of explosives could be prevented.

These remarks apply in particular to the Scotland and Northern Divisions, in which the majority of the accidents occur year by year.

In my Annual Report for 1924, I wrote, in reference to these accidents:—" It is difficult to devise by Regulations and Orders means to overcome human failings and I think progress lies in the better training and education of the persons upon whom the responsible duty of shot-firing is cast."

Apparently these words fell on deaf ears, for in reference to this subject, Mr. Frazer in 1936 reports as follows:—"Instruction can do much to prevent these accidents and discipline can do more. The Explosives Order, if carried out exactly, not only provides against practically all accidents directly due to shot-firing but also against explosions of firedamp and dust caused by the use of explosives, but there is a woeful lack of knowledge of its provisions."

Mr. Frazer goes on to explain how he made a test of the firemen, who were also shot-firers, at a safety lamp mine and states, "The men were thoroughly at ease and entered into the spirit of the test but, nevertheless, no man succeeded in obtaining 65 per cent. of the total marks and one man fell below 32 per cent. All the firemen tested were intelligent and capable men and doing their best, yet the result was distressing when the consequences of a single mistake in a pit are considered."

Managers should make an effort to get rid of this class of accident and to that end might well follow the example, referred to by Mr. Rowley, of three Managers, Messrs. Wroe, Champion-Jones and Worthington, who, with Mr. J. Smith, of the Mining Department of the Walker Technical College, Shropshire, invited the local shot-firers and deputies to a series of discussions on shot-firing. Mr. Rowley states:—"Several discussions took place at times to suit the convenience of the men. On each occasion each of the four gentlemen mentioned took a party of four or five men and spent two hours asking them questions from a questionnaire, correcting their answers when necessary, and giving short explanations. The questionnaire was based on the Explosives in Coal Mines Order and was very exhaustive. Those who attended the discussions were very interested and appreciative, and it was felt that the meetings had had a most beneficial effect."

(b) Suffocation by Natural Gases.—In five accidents eight persons lost their lives and in two others two persons suffered injury.

Of the fatal cases, three, resulting in four deaths, were due to persons knowingly going into unventilated roads which were fenced off; in another case a fireman was suffocated by firedamp when making a pre-shift inspection on a Sunday evening and in the remaining case, which occurred in the Yorkshire Division, three persons lost their lives.

Each of these cases is described by the Divisional Inspectors in whose Division it occurred and in his description of the last-mentioned case, Mr. Humphrys says the loss of life was due to an outburst of firedamp, which gave sufficient warning for two of the victims to have escaped had the warning been heeded; the third victim was a deputy who lost his life in an attempt to save those of the other two.

It is necessary to stress that if, in fact, any road or place is abandoned, either it should be stowed up completely or so fenced that entry can only be obtained with considerable difficulty.

(c) Underground Fires.—One life was lost during the year following an underground fire, which was caused by an explosion of firedamp. The fire had to be sealed-off and it was whilst a stopping in a return airway was being strengthened with sand-bags that a man wearing self-contained breathing apparatus was overcome.

The apparatus he was wearing was subsequently examined and found to be in order, but it is thought that, when on his way up the return airway, he may have stumbled and, disarranging his mouthpiece, have breathed the deadly atmosphere. Details of this accident are given by Mr. Charlton in his Report for the North Western Division.

Although no injury was caused by them, it is convenient to mention here that there were 46 other fires underground during the year, 16 of which were due to spontaneous combustion. In addition, 24 cases of "heating" were reported.

(d) Irruptions of Water.—Seven persons were drowned by an inrush of water into Loveston Colliery, Pembrokeshire, from old workings.

No plans of the old workings have been discovered but, even had they been, it is doubtful if they would have revealed that an isolated area of thick coal to the dip of the old water level had been worked out by the "old men," as described by Mr. Ashley in his Report.

It is never safe to assume that in days gone by, the workers were unable to work to the dip of water levels. They did so work in dry seasons and did not always show such workings on their plans.

(e) Electricity.—Five persons were killed in five separate accidents due to electric shock. These and the non-fatal cases are dealt with in detail and remedies suggested by Mr. Horsley in his Report.

(f) Machinery.—Twenty-eight persons were killed and 111 seriously injured by accidents in connexion with the use of machinery

underground during the year.

This is an increase compared with the previous year of nine killed, but it would not appear that this increase is necessarily due to the increase in the use of machinery for, although the annual average number of persons killed due to the use of machinery underground during the ten years 1925–1935 (1926 during which there was a long stoppage of work, is omitted) is just over one half of the number killed in 1936, the variation during those ten years ranges from 21 in 1925 and 1928 down to 8 in 1931 and 6 in 1933.

During 1925, 20 per cent. of the total output was cut by machines; the percentage transported on conveyors during that year is not available, but in 1928, when the number of fatal accidents was the same as in 1925, 12 per cent. was conveyed and 26 per cent. cut by machines. In 1933, when there were only six persons killed, the comparable figures were 30 per cent. and 42 per cent. In 1936, these percentages rose to 48 and 55 respectively, but the fatal

accidents increased in a much greater proportion.

During last year twelve of the fatal accidents occurred in connexion with the working of coal-cutting machines. On the details of each accident being examined, it is plain that several of them would not have occurred if the persons involved had been more apprehensive of danger. Three were due to not replacing the cutter guards after changing the picks. As Mr. Frazer states, there is a considerable reluctance on the part of machinemen to use guards provided for their safety, but, whilst the individual may be in fault, the omission to use such safeguards points also to a want of efficient supervision.

Twelve fatal accidents occurred in connexion with conveyors, six of them in the Cardiff and Forest of Dean Division. In several instances the fencing at trailing and delivery ends could have been better; when cleaning up spilled coal even the smallest space at these places seems to tempt persons to insert their arms, though it may well be that they fear to stop the conveyor and so take a risk instead. In two cases men were fatally injured when stepping across conveyors, and in one a man, although warned that the conveyor was about to start, got on to it and was thrown down as it started, carried along and crushed against a steel bridge.

Three persons were killed when guiding ropes on to the drums of hauling engines. There should be no need for this practice if the drums were of sufficient width and the ropes had a proper lead.

Efficient fencing, supervision and strict discipline are the surest safeguards against these accidents.

(g) Other Accidents.—Accidents of a miscellaneous character are included under this heading. Thirty-six persons lost their lives and 247 were seriously injured. Of the fatal accidents, 12 were due to such slight injuries that the persons concerned did not think them

to be worth first aid treatment or, in several cases, even to be worth reporting; five would most probably have been prevented if hard hats, and three if gloves, had been worn.

EXPLOSIONS.

Forty accidents by explosions of firedamp occurred during the year. In 9 of them 71 persons were killed and 11 injured; in the remaining 31, 52 persons were injured, some slightly and some seriously.

The causes of these explosions and the results are shown in the following Table:—

Cause.	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons Injured.*
Naked Lights Safety Lamps Shotfiring	3 1 4 1	$\frac{3}{2}$ 64 2	$ \begin{array}{c} 25 \\ 1 \\ 1 \\ 1 \\ \hline 3 \end{array} $	41 1 8 4 3 6
Total in 1936	9	71	31	63
Total in 1935	7	37	30	67

^{*} Including persons injured by explosions which proved fatal to others.

The most serious accident during the year occurred at the Wharncliffe Woodmoor No. 1, 2 and 3 Colliery, Yorkshire, on 6th August. Fifty-eight men lost their lives, one only being found alive in the district affected by the explosion and he was so badly burned that he died five days later in hospital. Inspection showed (1) that two doors between intake and return airways had been propped open, thus short-circuiting the ventilation and allowing firedamp to accumulate, and (2) that the covers over the commutator and the switch of a loader motor had been taken off and loosened respectively for purposes of examination. The cable was found attached to instead of being detached from the motor switch, as was said to have been the instruction to electricians when making such examinations.

As the propping open of the two doors would result in firedamp accumulating at and about the face where the loader was placed, and no other cause of ignition being apparent or suggested, it would appear that firedamp thus caused to accumulate had been ignited either by arcing at the loader motor switch or at the uncovered commutator of the motor.

This lack of discipline was the originating cause of the explosion which was extended throughout the North-East District of the

Lidgett Seam by the agency of coal dust, much of the limestone dust used to prevent such a happening not having been raised into the air.

A Report* on this explosion has been published and in it will be found details and plans.

Another explosion in Yorkshire occurred on 2nd December at the Brierley Colliery. Ignition was due to an arc in a trailing cable which was being dragged along by a coal-cutting machine contrary to General Regulation 131 (h). One of the conductors broke at a place where it had been repaired and the arc thus caused burned through the insulation and so ignited firedamp which had been allowed to accumulate at a two feet fault running across the face. Firedamp had been found at this fault some ten days before the explosion and a brattice sheet was then erected to clear it. Unfortunately, the use of the sheet was not continued, with the result that the ventilation was not conducted into the canch formed by the fault, thus allowing firedamp to accumulate there.

The remaining two explosions with fatal results caused by electricity occurred in the Scotland Division. The circumstances are fully described by Mr. Frazer in his Report.

In the first case, that at Gartshore Nos. 9/11 Colliery, proceedings were taken against the Agent and the Manager for failing to provide adequate ventilation. The Manager was convicted but the case against the Agent, who claimed that he took no part in the details of ventilation, was dismissed.

In the second case, an overman and a fireman when carrying a small electrically driven fan down a heading dropped it. To see if it was damaged, they switched on the current when a broken rotor bar fouled the stator windings and caused open sparking. A violent explosion followed, burning the overman fatally, the fireman severely and another man some distance away slightly. The heading had been standing for three months.

The Scotland Division, as is usual, provided by far the greatest number of explosions caused by naked lights, 19 of the 25 so caused. Mr. Frazer also deals with these cases in his Report. Some, such as firemen taking naked lights when looking for firedamp, were due to sheer folly.

Mr. Frazer also records an explosion which was caused when a man was stamping with a pick a starting point for a shot-hole in the face of a brushing; three men were burned.

There were two explosions caused by shotfiring. One occurred in the Swansea Division, where two colliers were slightly burned on firing a charge of Gunpowder, and the other at Herbertshire Colliery, Stirlingshire.

^{*} Report on the Causes and Circumstances attending the Explosion which occurred at Wharncliffe Woodmoor Nos. 1, 2 and 3 Colliery, Yorkshire, on 6th August, 1936. Cmd. 5503. Price 2s. 0d. net.

In the latter case, on the second of two brushing shots being fired in a roadhead, an explosion of firedamp occurred along the longwall face and fatally burned two miners two places away; six other persons suffered injury from shock.

The shothole had crossed a close break and had stopped just short of a second; it had been heavily overcharged with 28 ounces

of unsheathed Polar Samsonite.

One other explosion was caused by the firing of a permitted explosive during the year but without injury of any kind to any person. This case, which is fully described by Mr. Felton in his Report, was a very good example of the danger arising from breaks across a shothole. The shothole, one of five in a ripping canch, had been bored 15 hours before it was fired and, weighting having taken place in the meantime, the front part of the canch had lowered and cut off the inmost six inches of the hole. When examining the hole before charging, the shotfirer thought his scraper had touched the back of the hole, whereas, in fact, it was hard against a break. The charge was 12 ounces of unsheathed Hawkite.

As an impression exists that the danger from shotfiring is increasing, it may be well to give the figures showing the position

as it actually is:-

Annual	No. of	No. of	Persons.	Quantity of	No. of
Average.	Explosions.	Killed.	Injured.	Explosives used—lb.	shots fired.
1927–1931 1932–1936	9·0 5·6	17·2 11·6	25·2 8·8	26,233,276 24,532,207	52,367,469 52,335,151
1936	2	2	8	27,307,475	58,662,051

COAL DUST.

During the year 6,301 samples of the dust on the underground roadways were taken by the Inspectors in the several Divisions. Six per cent. of these samples were found on analysis to contain less than 50 per cent. of incombustible matter. The highest percentage of samples not in compliance with the General Regulations was in the Scotland Division, namely 9; and the lowest, namely 4, in the Midland and Southern Division.

SHAFT ACCIDENTS.

Twenty persons were killed in 18 accidents and 60 injured in 25 accidents in connexion with the working of shafts during the year.

The worst shaft accident during the year occurred at Birley Beighton Colliery, Yorkshire, and is dealt with in detail by Mr.

Humphrys in his Report. Shortly, the facts were as follows:— As one of the ropes at the main winding shaft was being recapped, eleven persons were being raised in a shaft 18 feet in diameter and 420 yards deep which was used only as a second outlet from the mine. This shaft was equipped with one single-deck cage with an entrance at one end only; there were two rope guides, one placed midway on each side of the cage. A new flattened strand winding rope had been put into use the day before the accident in place of one of the locked coil type. When the cage had been raised about half way up the shaft the cage began to spin and when 50 yards from the surface it struck a bunton which normally was four feet clear; the cage was tilted and its occupants were thrown against the gate, which burst open, and three of them fell to the bottom of the shaft and were killed. The winding engineman noticed that the guides were coming together and stopped winding and the remaining eight men were brought to bank by means of a temporary tackle.

Following the accident a locked coil rope was put on and the number of guides increased to four.

Seven men were killed, four in the Scotland Division and three in the Northern Division, by falling into shafts from part way down. Of the four cases in Scotland, shaftmen were concerned in two. In one of these the man fell off the top of a stationary cage; safety belts were provided but not used. In the other, a cage in which 12-foot rails were being sent to the surface got fast owing to the rails not having been properly secured. The shaftman, aged 63, attempted to slide down the winding rope from the surface, lost his hold and fell 45 fathoms. The cages were subsequently released simply by reversing the winding engine. In the third case a manager was assisting to install a rising main when the platform on which he was standing collapsed and he fell to the bottom of the shaft. He had helped to erect the platform and, although safety ropes were provided, he did not use one. The remaining case was that of an onsetter who was pulling back a full tub which had run through the cage; he fell into the sump, the cage having in the meantime been raised. The winding engineman said he had received the signal to raise and, although there was some dispute on the point, it is likely that he had.

Of the three fatal cases in the Northern Division, one was to a boy, aged 15, who, having helped an onsetter to send to bank all the full tubs from a mid-inset, was standing in the three feet space between the gate across the entrance to the shaft and the cage awaiting permission from the onsetter to enter the cage. Suddenly the cage was raised and he, jumping back, struck the shaft gate and rebounded into the shaft. The cage was raised owing to faulty signalling by the onsetter but, even so, he should not have allowed the boy to stand where he did and, in any case, persons of more mature years should be employed at shafts. The other two fatal accidents in this Division were also due to faults in connexion with the signals.

One man was killed and another injured by things falling down the shafts. In neither case was a hard hat being worn although, in the latter case, they were provided. All shaftmen and onsetters should wear these hats.

Of the 60 persons injured during the year, 42 were hurt in eight overwinding accidents. There was no fatal accident from this cause and none from ropes or chains breaking.

There was no fatal shaft accident in the North Western and Cardiff and Forest of Dean Divisions.

In previous Reports I have referred to the fine record held by the winding enginemen and by those having the care of the ropes, chains and other gear used in connexion with winding operations; it is a record of which they may well be proud.

SURFACE ACCIDENTS.

Fifty-eight persons, whose ages varied from 14 to 76, were killed and 311 seriously injured by accidents at the surface of mines during the year. The number of persons killed is the lowest on record and 29 fewer than in 1935. But, even so, when the details of each accident are examined, the number could easily have been much lower. Twenty persons were killed in connexion with machinery; 28 on railways, sidings or tramways; 1 by electric shock; 8 by miscellaneous causes and 1 by the bursting of a steampipe due to bad casting.

Of the 20 deaths in connexion with machinery, 7 occurred in the Scotland Division; there was one in the Northern and two each in the other Divisions.

Year after year several persons are killed when oiling machinery which is in motion. Six deaths were so caused during 1936. This should surely not be. Notices prohibiting the practice, as experience proves, are not enforced or not observed. If machinery must be oiled when it is running, then the provision of lubricators placed outside the fencing guarding it should be compulsory.

Adequate fencing of machinery is also needed. There has been much improvement in fencing generally during the last few years but many examples of machinery guarded by simple post and rail fences still exist. Again, as experience proves, such fences are not enough. Four men were killed during the year after they had got over or through such fencing and then become entangled in the machinery which it was supposed to guard.

In the Pamphlet* issued by the Mines Department in December, 1928, there are many examples of the manner in which machinery should be fenced.

^{*} Mines Department Safety Pamphlet No. 5: Fencing and other Safety Precautions for Machinery at Mines. Published by H.M. Stationery Office, 1928. Price 6d. net.

I quote the account given by Mr. Charlton in his Report of an occurrence which illustrates how accidents with machinery occur and how careless was the conduct of the officials concerned, as follows:—

"A washery foreman was filling a grease cup on a hanging pedestal bracket for a length of shafting running at a speed of 150 revolutions per minute, when his buttonless jacket-became entangled with the shaft coupling near the pedestal and he was whirled round and killed. The shafting was nine feet above floor level, and the pedestal was usually reached by means of a ladder reared against the side wall of the building from which the shafting was 2 ft. 6 in. distant.

"The foreman, who was doing this work because the usual machinery attendant was absent, moved the ladder and reared it against a plank passing under the shafting 6 ft. 6 in. from the floor, which action brought him into a position that a coupling on the shaft intervened between him and the pedestal. No one saw the accident, but it is assumed that in reaching past the revolving coupling his jacket was entangled.

"Up to three weeks prior to the date of the accident, the overhead shafting was securely fenced by curved strips attached to a metal frame, but this fencing had been removed to effect a repair to the shafting by means of the coupling, and as the fence was no longer of the right shape it could not be replaced. The colliery enginewright continued nevertheless to report daily that the machinery was securely fenced. He was prosecuted in virtue of General Regulation 34, for a breach of Section 55 of the Coal Mines Act and fined £5 including costs.

"A significant feature of this accident was that the victim had warned others that greasing of machinery had not on any account to be done while it was in motion."

It is to be hoped that colliery engineers and enginewrights know of this case, for, in my judgment, they are the people directly responsible for the proper fencing of machinery and so it is within their power to prevent nearly all the accidents from this cause.

Many of the 28 fatal accidents which happened on railways and

tramways were also preventable.

Five of the nine which occurred on tramways would have been prevented by the provision and use of stop blocks and one if a man, when on his way to work, had not elected to walk in front of an empty set instead of in the six yards wide clear space at the side of the tramway.

Of the 19 which occurred on railways two, such as a locomotive driver falling when getting off his engine and a locomotive becoming derailed at a weighbridge and then falling over a bridge into a river, were straightforward; three others occurred due to want of

care when crossing sidings; four to men being thrown under the wheels of moving trucks when trying to pin down the brakes when sitting on levers; one to a shunter who, in the absence of the driver, got on to a locomotive intending to move it a short distance but instead lost control and was killed when it collided with some stationary wagons; one to a man when getting on to a locomotive on which he had no right; and one to a collision resulting from the propping up of a runaway switch expressly provided to prevent such a happening.

The untidy condition on the surface at some collieries is a disgrace and should not be allowed; it is a pleasure to visit others. The condition in which the surface is kept is, in some degree, a measure of the character of the persons in control. At one colliery where an accident occurred during the year, a visitor, who was not a mining man but who went to express his sympathy, on seeing the appalling litter and mess, asked, with good reason, if the explosion had occurred on the surface.

GENERAL.

Inspections on behalf of Workmen.

During the year 4,739 inspections were made at 486 mines by persons appointed by the workmen employed in those mines, in exercise of their powers under Section 16 of the Coal Mines Act, 1911. Sixty-eight per cent. of these inspections were made in the Northern Division and 19 per cent. in the Cardiff and Forest of Dean Division. I regret that more use is not made of this section of the Act in the other Divisions.

Protective Equipment.

In surveying the progress made with Protective Equipment during the past year, it is interesting to note not only the improvements that have been made in the equipment, but also the development in the use of particular types in specific coalfields. In this connexion, while the use of certain equipment has been increased by intensive propaganda and the sympathetic attitude of the industry as a whole, many developments have been dictated by the conditions encountered in the different mines. The acceptance of the value of Protective Equipment is now becoming general and the limitations of its development are chiefly governed by the conditions in which it has to be used.

During the year over 150,000 hard hats made in this country were supplied to British mines, making a total of nearly 300,000 in the last two years, and their use is now well established in all the coalfields. It is now by no means uncommon to find all the underground workers at a colliery equipped with hard hats.

Falls of ground have always been one of the major hazards in mining, and the protection to the miner against falling objects, by the use of hard hats, has resulted in the saving of many lives and a reduction in the number and severity of head injuries. As an instance of the value of these hats, at three collieries where the employees were nearly all equipped with hard hats, a reduction of 78 per cent. in the aggregate number of head injuries involving loss of work for over 3 days has been achieved.

Safety boots, the protective features and durability of which are appreciated by the wearers, are being extensively used, and in consequence many potential foot injuries have been prevented and others minimised.

Suitable gloves are now available for every operation requiring hand protection, and their use is increasing among haulage hands and face workers, who are realising the advantages to be gained by wearing them.

For protection of the eye against both flying fragments and dust, specially designed goggles which are light and comfortable to wear are now obtainable at a reasonable cost. Eye injuries are among the most serious of the non-fatal accidents, and by the use of goggles, are the most easily prevented.

The introduction of shin-guards, knee pads, and other equipment,

continues to make steady progress.

When it is considered that injuries to the head, hand, foot and eye account for more than half of the non-fatal 3-day accidents that occur in the mines each year, it will be appreciated how much the adoption of Protective Equipment is justified.

The individual figures for certain collieries where Protective Equipment in one form or another is being extensively used justify hope for a marked reduction in accidents when the use of such

equipment becomes universal.

In order to stimulate enthusiasm in the subject of Protective Equipment, the Safety in Mines Research Board has issued a pamphlet* "Protective Equipment for Mineworkers" of which many thousands of copies have been distributed free of charge.

Explosives.

During the year 27,307,475 pounds of explosives were used in 58,662,051 shots; of this weight 20,011,854 pounds were Permitted Explosives.

The use of "sheathed" explosives continues to increase. In view of the increased safety obtained by their use, it is desirable

that they alone should be used in all safety lamp mines.

Several of the Divisional Inspectors give particulars of methods of getting down coal other than by explosives. These methods

^{*} Protective Equipment for Mineworkers, issued by the Safety in Mines Research Board, 1937.

include hydraulic coal bursters, which, according to Mr. Humphrys, do not injure the roof as do explosives; there is thus, in addition to the elimination of any risk there may be due to the use of explosives, less chance of accidents from falls.

Fatal cases of Septicæmia or Blood-poisoning following injuries which were in themselves not serious.

In view of the importance of attention being given to all injuries, however slight, I have obtained from Dr. S. W. Fisher, Medical Inspector, the following analysis of such accidents which proved fatal during the year:—

"Twenty-two such cases occurred during the year. They differed greatly in many ways: the ages of the patients ranged from 17 years to 68 years; the injury was received in various parts of the body and from various causes; the time between the accident and the death of the patient varied from a few days to a few months; in three cases there was no evidence of the skin having been broken; in sixteen cases there was no evidence that any first aid treatment had been received at the colliery; in three cases a bandage only had been applied, and one case received treatment only when the injured person reached the Surface Ambulance Room.

A more detailed account of the injuries is as follows:—

- (a) Where skin was broken: slight cut little finger; grazed thumb by piece of stone; slight cut by small stone; back of hand cut by falling stone; slight abrasion by piece of roof; cut on elbow by piece of coal; cut on leg by piece of coal; wound on finger by piece of coal; cut thumb by piece of coal; cut finger jagged end of support; splinter in leg from wooden sleeper; blow on finger when erecting steel arch; cut on leg from rope; finger injured by derailed tub; slight injury index finger; cut finger; cut on knee through falling; stumbled and injured elbow; cracks on hand during frosty weather.
- (b) Where skin was unbroken: injured knee; twisted knee; and injured hip.

The cases in which the skin was reported as unbroken may be accounted for in two ways (a) a 'break' may have been present but so small as to escape notice, (b) the patient may have had a source of infection in some part of his body (throat, teeth, boils, etc.) resulting in germs in the blood which were able to attack the part devitalised by the blow or injury.

The following rules should strictly be observed:

- (i) every cut or scratch, however slight, should be treated immediately with an antiseptic.
- (ii) The cut or scratch should then be covered by a light sterilized dressing.

- (iii) The cut should never be wrapped by a bandage alone.
- (iv) Work should be discontinued at the earliest sign of pain of a throbbing character.
- (v) A doctor should be consulted at the earliest sign of redness or swelling of the part; ointments or 'salves' should never be applied at home, except by order of a doctor."

The Edward Medal.

During the year His Majesty the King was graciously pleased to award the Edward Medal for gallantry in mines to:

- Mr. R. Stoker, Overman, Eppleton Colliery, Durham.
- Mr. G. C. Heslop, Agent and Manager, Loftus Ironstone Mine, Cleveland.
- Mr. N. Baster, Agent; Mr. George Beaman, Rescue Worker; and Mr. James Pollitt, Captain of a Rescue Brigade, South Kirkby Colliery, Yorkshire.

A bald statement of fact covering conduct traditionally associated with those who work in mines.

CONCLUSION.

As a matter of personal interest I give below the number of deaths and the death rates for two decennial periods—1902–1911 and 1927–1936—which correspond closely with my first and last ten years as a member of the Inspectorate:

			Undergre	ound.			On	
Decennial Period.	By Explosions of Fire- damp or Coal Dust.	By Falls of Ground.	Shaft Acci- dents.	Haulage Acci- dents.	Miscel- laneous.	From all Causes.	Surface from all Causes.	Total.
-			λĩα	mber of D) a a tha			
1902–1911 1927–1936	1,268 827	5,613 4,753	837	2,312		11,102 8,717		12,498 9,490
Annual Average. 1902–1911 1927–1936	·17	Death •75 •69	h Rate pe •11 •04	v 1,000 Pe			·77 ·42	1·34 1·08
1902–1911 1927–1936	·48 ·35	Death Ro 2 · 12 2 · 01	ite per 1, 32 13	000,000 to	ons of mi	neral rais 4·20 3·6 9	sed. •53 •33	4.73

I regret that the improvement has not been greater. I can bear witness to the strenuous efforts made in every coalfield to bring about an improvement. Those efforts will continue, and by the

close co-operation of all concerned, it is certain that greater safety will be attained.

It will be with sincere regret that in March next I shall lay down the reins of office and I should like to take this opportunity—the last I shall have—to thank all my colleagues for their loyal support and to wish peace, goodwill and prosperity to all concerned in the Industry.

I have the honour to be,
Sir,
Your obedient Servant,

HENRY WALKER

APPENDIX I.

Papers Read or Lectures Given by H.M. Inspectors, 1936.

- "General Safety," by E. H. Frazer, O.B.E., M.Sc., Divisional Inspector before managers, officials and workmen at (a) Larkhall Miners' Welfare Institute, (b) Bellshill Miners' Institute, (c) Welfare Institute, Glencraig.
- "Falls of Ground," by E. H. Frazer, before agents and managers of collieries in East Scotland, at University Mining Department, Edinburgh.
- "Safety in Haulage Operations," by E. H. Frazer, before Shotts Safety
- "Safety Principles," by H. T. Foster, B.Eng., Senior Inspector, before boys, Safety Class, Preston Lodge School.
- "Mine Ventilation and Use of Explosives," by H. T. Foster, before officials and workmen, Glencraig Institute.
- "Types of Preventable Accidents," by A. Stoker, Senior Inspector, before workmen at (a) Larkhall Miners' Welfare Institute, (b) Bellshill Miners' Institute.
- "The Problem of Mining Accidents," by J. A. Grove, Junior Inspector, before boys, workmen and officials at (a) Rosewell Institute, (b) Lochgelly Institute, (c) West Calder High School, (d) Denbeath Officials' Club, Wellesley, (e) Falkirk Mining School.
- "The Safe Use of Coal Face Electrical Plant," by R. Crawford, Junior Electrical Inspector, before officials and workmen of (a) Darngavil Coal Co., Ltd., and Wilson and Clyde Coal Co., Ltd., (b) Wemyss Coal Co., Ltd., (c) Robert Addie & Sons' Collieries, Ltd., (d) Wilson & Clyde Coal Company, Ltd.
- *" Review of Accidents in the Northern Division," by T. L. McBride, B.Sc., Senior Inspector, before Durham Mining Society.
- *" Rescue Work in Mines," by H. S. S. Scott, Senior Inspector, before the Armstrong College Mining Society.
- †" Accidents in Mines," by T. A. Rogers, Junior Inspector before University of Durham Medical Society.
- †" Accidents to Boys with Special Reference to the Northern Mines Inspection Division," by T. A. Rogers, before North of England Institution of Mining and Mechanical Engineers, Associates and Students' Section.
- t" The Opening of the Doncaster Coalfield," by H. J. Humphrys, D.S.O., M.C., Divisional Inspector, before Doncaster and District Mining Society.
- §" Accidents to Boys," by H. J. Humphrys, before Yorkshire Branch of National Association of Colliery Managers.
- †" Modern Mining Problems," by G. Cook, Senior Inspector, before (a) Huddersfield and District Mining Society, (b) Yorkshire Deputies Association.
- "Mine Rescue and Recovery Work," by P. L. Collinson, B.Sc. (late Junior Inspector), before Yorkshire Colliery Undermanagers' Association.

† Transactions of the Doncaster & District Mining Society. § "Iron and Coal Trades Review," issue of 30th October, 1936.

^{*} The Journal of the Armstrong College Mining Society, July, 1936.

[†] Local Press.

- *" Improper Use of Mining Explosives," by F. E. Stone, Sub-Inspector of Mines, before (a) Normanton Castleford & District Mining Society, (b) Barnsley Technical College.
- †" Presidential Address," by J. R. Felton, O.B.E., Divisional Inspector, Midland Counties Institute of Engineers.
- *" Some Lessons to be learned from Reports of H.M. Inspectors of Mines," by A. H. Steele, Senior Inspector before The Ilkeston Brotherhood.
- "The Deputy and His Duties," by F. Shooter, Sub-Inspector of Mines, before Officials of Whitwick Colliery.
- "Practical Suggestions for Effecting a Diminution in the Accident Rate," by D. Coatsworth, Junior Inspector, before Firemens' Association, Burnley.
- t" Accidents to Boys engaged in Haulage Operations," by W. B. Brown, Junior Inspector, before Safety Badge Class at Wigan Technical and Mining College.
- "The Prevention of Accidents and proper Training of Boys," by H. G. Madley, Junior Inspector, before Waun Llwyd Colliery Officials' Association.
- §" The Maintenance and Testing of Shaft Signalling Equipment," by R. Robinson, Junior Electrical Inspector, before the South Wales Branch of the Association of Mining Electrical Engineers.
- "Some Medical Aspects of Coal Mining," by S. W. Fisher, M.D., B.Ch., Medical Inspector, before (a) Metals, Ltd., Birmingham, (b) University of Birmingham Mining Society, (b) The County Mining and Technical School, Nuneaton, Warwickshire, (d) The Dalton and District Mining Society, Rotherham.
- "The Prevention of Silicosis," by P. S. Hay, O.B.E., Inspector for Special Duties, before Mining Students Society, Royal Technical College, Glasgow.
- \parallel " The Mist Projector Method for Suppressing Dust and Fumes after Shotfiring," by P. S. Hay, before the following branches of the National Association of Colliery Managers:—(a) South Wales and Monmouth, (b) Midland, (c) North Wales, (d) North of England, (e) South Staffs. Warwick and Worcester, (f) Yorkshire, (g) Lancashire.

^{*} Local Press.

[†] Transactions of Institution of Mining Engineers. Vol. XCII, Part 3. ‡ "Colliery Guardian," issue of 16th December, 1936. § "Mining Electrical Engineer," Vol. XVII, No. 197.

[&]quot; Iron and Coal Trades Review," issues of 27th March, 17th and 24th April, 1st, 22nd and 29th May, and 4th December, 1936, respectively.

APPENDIX II.

Divisional Summary of Non-Fatal Accidents disabling the Person injured for more than 3 days occurring at Mines under the Coal Mines Act during the Year 1936.

	ЛШ	aurin _i	gine	r ear	1930				
			I	nspection	Division	١.			
Place or Cause of Accident.	Scot- land.	Nor- thern.	York-shire.	North Mid- land.	North Wes- tern.	Cardiff and Forest of Dean.	Swan- sea.	Midland and Sou- thern.	Total.
			Nu	nber of S	Separate .	Accidents	3.		
Total	14,524	28,702	23,859	18,044	15,371	15,986	9,368	9,804	135,658
	Nun	nber of P	ersons in	jured wh	o were d	isabled fo	or more	than 3 da	ys.
Underground: Explosions of Firedamp or Coal Dust Falls of ground Shaft Accidents Underground Haulage Acci-	38 4,440 88	8 8,494 23	 8,322 20	6,659 34	5,287 29	7,184 16	3,803 18	 3,346 10	56 47,535 238
dents	3,417	10,441	6,313	3,465	3,536	2,564	1,971	1,942	33,649
Accidents	5,154	7,331	7,464	6,576	5,244	5,220	2,812	3,755	43,556
Total Underground	13,137	26,297	22,119	16,736	14,098	14,986	8,608	9,053	125,034
On Surface: On railways, sidings or tramways Elsewhere Total on Surface	512 925 1,437	782 1,687 2,469	498 1,297 1,795	473 876 1,349	492 821 1,313	338 694 1,032	243 541 784	199 556 	3,537 7,397
Grand Total $\begin{cases} 1936 & \dots & \dots \\ 1935 & \dots & \dots \\ 1934 & \dots & \dots \end{cases}$	14,574 14,674 13,702	28,766 27,479 26,913	23,914 22,742 23,101	18,085 17,877 17,999	15,411 15,092 15,398	16,018 17,205 16,996	9,392 9,310 9,479	9,808 9,377 9,271	135,968 133,756 132,859
			Rate pe	r 100,000	man-shi	fts worke	ed.*		
Underground: Explosions of Firedamp or Coal Dust Falls of ground Shaft accidents Underground Haulage Accidents Miscellaneous Accidents Underground	0·18 21·66 0·43 16·67 25·14	$0.02 \\ 25.09 \\ 0.07 \\ 30.84 \\ 21.65$	$33 \cdot 21$ $0 \cdot 08$ $25 \cdot 19$ $29 \cdot 79$	0.01 39.25 0.20 20.42 38.76	0·01 29·67 0·16 19·84 29·42	0·01 39·38 0·09 14·06	0.04 39.15 0.19 20.29 28.95	30·01 0·09 17·41 33·68	0·04 31·01 0·15 21·95 28·41
(D + 117 1	64.08	77.67	88.27	98.64	79.10	82.16	88.62	81 · 19	81.56
On Surface: On railways, sidings or tramways. Elsewhere Total on Surface	7·39 13·35 20·74	7·25 15·63	5·84 15·22 21·06	7·53 13·94 21·47	6·88 11·49 18·37	8·05 16·52 24·57	8·82 19·64 28·46	4·85 13·55 18·40	6·97 14·58
Grand Total $\begin{cases} 1936 & & \\ 1935 & & \\ 1934 & & \end{cases}$	53·13 55·57 52·18	$ \begin{array}{r} 64 \cdot 43 \\ 63 \cdot 68 \\ 62 \cdot 01 \end{array} $	$71 \cdot 21$ $70 \cdot 69$ $71 \cdot 72$	77·78 80·21 79·71	$ \begin{array}{r} 61 \cdot 72 \\ 62 \cdot 51 \\ 63 \cdot 24 \end{array} $	71·38 72·63 70·05	75·33 73·07 72·15	$ \begin{array}{c c} \hline 64 \cdot 30 \\ 62 \cdot 68 \\ 62 \cdot 29 \end{array} $	66·64 67·03 66·08
	E	stimated	Numbe		an-shifts housand	actually s)	worked	l in 193	36.
Below ground Above ground	20,502 6,929	33,857 10,790	25,059 8,524	16,967 6,284	17,823 7,147	18,241 4,201	9,713 2,755	11,150 4,103	153,312 50,733

^{*} The rates for underground accidents are based upon the number of shifts so worked, and those for surface accidents upon the number of shifts worked above ground.

*Note.—The particulars of accidents above are complementary to those shown in Table 5 of the Reports of H.M. Inspectors of Mines under the Coal Mines Act, 1911, for the year 1936, which are published separately for each Division. Certain classes of non-fatal accidents are reported at the time of their occurrence to H.M. Inspectors of Mines most of which involve disablement for more than 3 days and are included above.

REPORT OF THE PETROLEUM DEPARTMENT.

THE PETROLEUM (PRODUCTION) ACT, 1934.

In the Annual Report for 1935 some particulars were given of the 39 Prospecting Licences which were granted during the year to the D'Arcy Exploration Company, Limited, the development Company of the Anglo-Iranian Oil Company, Limited, in respect of areas amounting to a total of nearly 7,000 square miles. In the course of 1936, 6 more Prospecting Licences were issued to other licensees covering nearly 500 square miles of additional territory and at the end of the year a number of other applications for Prospecting Licences were under examination in the Petroleum Department.

Licences granted under the Act during 1936.—On the 31st July, 1936, the Secretary for Mines announced the grant to the Anglo-American Oil Company, Limited, of 5 Prospecting Licences covering an aggregate area of 478 square miles in Hampshire and Sussex. Particulars of the situation and boundaries of the licensed areas were published in the "London Gazette" on the 4th August.

At the end of September a Prospecting Licence was granted to the Midlothian Petroleum Syndicate (Major C. A. Pogson and E. H. Cunningham-Craig, Esq.) covering an area of about 12 square miles in Midlothian, particulars of which were published in the "London Gazette" on the 2nd October, 1936. Following an application subsequently made by the Syndicate, the Secretary for Mines sanctioned the assignment of their Licence to the Anglo-American Oil Company, Limited, and notice of the assignment was published in the "London Gazette" on the 4th December, 1936.

The situation of all the areas licensed up to the end of 1936 is

shown on the map facing page 104.

SUMMARY OF WORK CARRIED OUT BY LICENSEES.

The year has witnessed a considerable measure of activity in many of the licensed areas: geological and geophysical surveys have been carried out, nine shallow exploratory borings aggregating 2,221 feet have been made and 9,246 feet have been drilled in deep test borings.

South of England.—The occurrence of indications of petroleum and flows of natural gas has been known for many years from the records of borings made for water or coal in Kent and Sussex. These indications are nearly all in strata of Upper Jurassic age. A well-saturated oilsand of Lower Cretaceous age outcrops northwest of Pevensey. Further west, along the Dorset coast the geologists of the D'Arcy Exploration Company have found

impregnations of oil and bitumen in sandstone and limestone in certain Lower Cretaceous and Upper Jurassic strata.

The widespread occurrence of actual indications of petroleum and the existence of possible source rocks from which some petroleum may have been evolved have therefore led licensees to commence their drilling operations, in the first instance, in the southern counties.

The D'Arcy Exploration Company selected the Portsdown anticline, north of Portsmouth as the site of its first deep test boring. The geological structure here was considered to be favourable for the concentration of petroleum if such had been formed in this region and if suitable reservoir rocks were contained within the structure. Drilling began on 30th March, 1936, and had reached a depth of 5,351 feet in the Middle Lias by the end of the year.

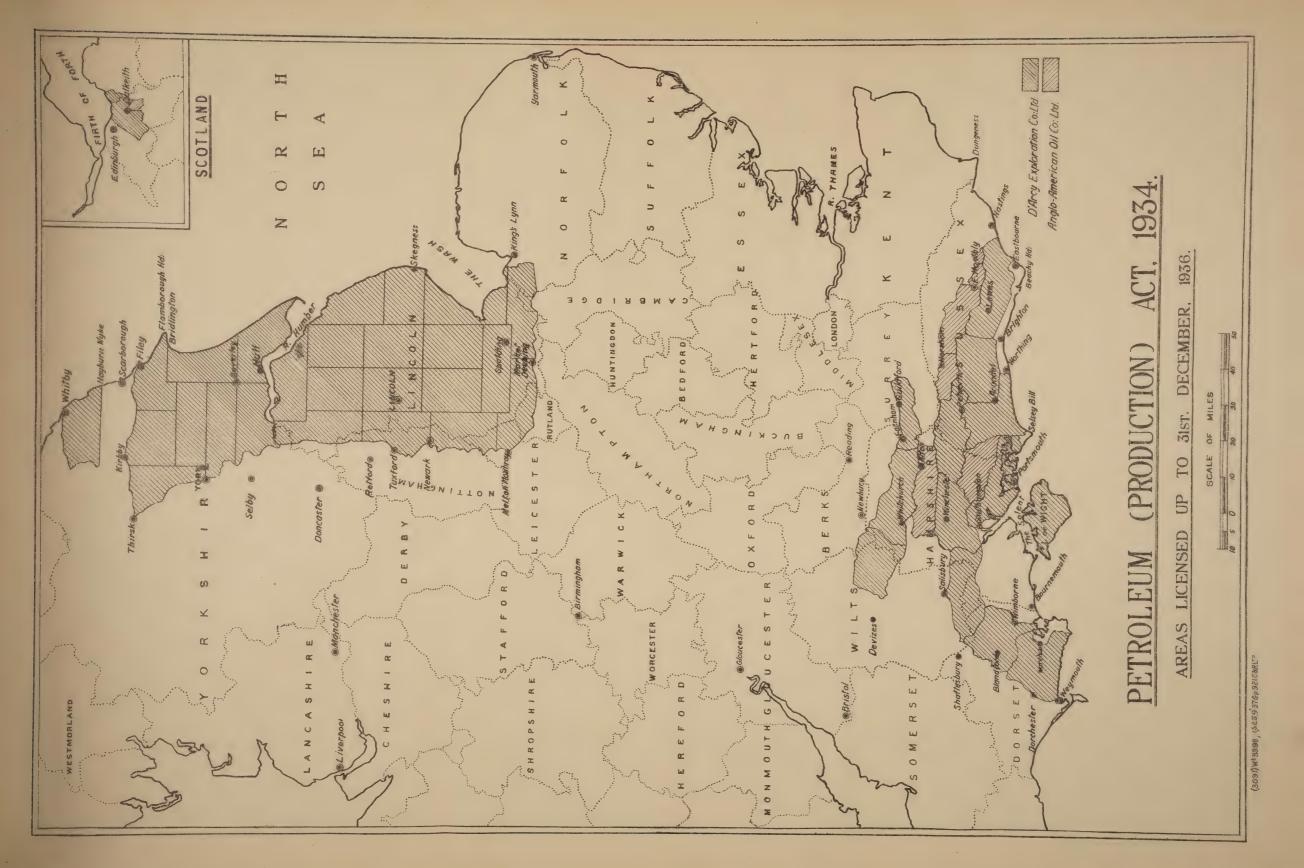
The second test well of the D'Arcy Exploration Company was located about 2 miles west-south-west of Henfield (Sussex) on a well-defined anticlinal arch. In this case also it was hoped that oil had concentrated in porous reservoir rocks in the Upper and Middle Jurassic strata. Drilling started on 25th June and a depth of 3,895 feet in the Inferior Oolite had been attained by 31st December, 1936.

Drilling at both sites was still proceeding at the end of the year.* Traces of oil were found in the drill cuttings and cores from the Upper and Middle Jurassic at both boreholes, but no accumulation was encountered. Permeable beds of sufficient porosity to act as reservoir rocks were almost entirely absent in the strata mentioned. Much valuable geological information has, however, been obtained, which will be utilized in the continuation of the search for oil.

In addition to its deep test wells the D'Arcy Exploration Company carried out, during the year, surface geological investigations, supplemented where necessary by shallow borings (power drilled) and augering (hand boring) for geological data; the nature and extent of such work naturally varied in different prospecting areas but some such work was done in each licensed area in the south. At the end of the year the Company had selected two further sites for deep test borings in the south.

The Anglo-American Oil Company to whom five Prospecting Licences were issued at the end of July, 1936, had by the end of the year completed a considerable amount of geological work including the drilling of numerous auger holes to check the nature of the strata beneath the surface soil. After careful examination of the results of this work, the Company selected a site for a deep test boring near Grove Hill, north-east of Hellingly, Sussex, for a test of oil possibilities in the Lower Cretaceous and Jurassic. This site is over 25 miles east of the D'Arcy Company's boring near

^{*} The Portsdown borehole was subsequently abandoned at 6,556 feet and the Henfield borehole at 5,105 feet.



it is a second of the second o

Henfield, and is on a different geological structure. Drilling at Grove Hill is expected to begin in the Spring of 1937.

East and North-East England.—In the twenty-five areas licensed to the D'Arcy Exploration Company geological or geophysical work was actively prosecuted.

In this region the search for oil is concerned with much older strata than is the case in the south of England. In the Cleveland area of Yorkshire, after careful geological examination, a site for a deep test boring was selected near Aislaby in Eskdale. The well will be drilled through the Lower Lias, Rhaetic and Trias formations to test the oil possibilities of the Permian Magnesian Limestone. This limestone and its associated strata have yielded oil on a commercial scale in borings in Germany, and shows of oil were encountered some years ago in borings for salt and coal near Stockton-on-Tees. Drilling in Eskdale is expected to begin in the early summer of 1937.

Further south in the long strip of country between Pickering and Peterborough the D'Arcy Exploration Company are seeking evidence of anticlinal structures in the Carboniferous rocks which are here deeply buried beneath a blanket of Permian and Mesozoic strata which gives no clue to the disposition of the structure in the older rocks beneath it. Numerous occurrences of petroleum and natural gas are known from the Carboniferous further west along the eastern edge of the limestone mass of the Peak District, in coal workings still further east, and in certain deep borings. The only productive oil well in Britain (Hardstoft No. 1) found oil near the top of the Carboniferous Limestone in Derbyshire.

In order to obtain evidence bearing upon the possible disposition of folds in the Carboniferous beneath the blanket of newer strata, geophysical methods have been employed since surface geological surveys would be of little value. A number of traverses with the Torsion Balance supplemented locally by gravimeter and pendulum observations have been made. In addition, a seismic reflection survey has been carried out over a selected area, and a magnetometer survey gave another line of attack. By the end of the year the results of all these field observations were being analysed and correlated.

It is hoped that the geophysical evidence will indicate the most favourable sites for borings to confirm or disprove the occurrence of hidden structures and not until such structures have been located can drilling for oil be considered.

Scotland. (Lothians).—Geological work was carried out by the D'Arcy Company on its Cousland area and a site was selected for a deep test boring for oil.

The Anglo-American Oil Company to whom a Prospecting Licence covering an area in Midlothian was assigned towards the end of the year has also begun geological investigations. A test well was drilled within this area in 1921–22 by Messrs. S. Pearson & Son, on behalf of H.M. Government. Oilsands are known to occur in rocks of Lower Carboniferous age; and the test well referred to yielded a small quantity of oil but did not penetrate the full thickness of the possible oil bearing zone.

Licences in force under the Petroleum (Production) Act, 1918.— No drilling was carried out during 1936 by licensees under the 1918 Act. A small production of oil was again obtained during the year from the well at Hardstoft in Derbyshire.

THE SCOTTISH SHALE OIL INDUSTRY.

The output of oil shale in 1936 was 1,409,000 tons, valued at £433,000 as compared with 1,408,000 tons, valued at £418,000 in 1935. During the year the sinking of the two shafts at Burngrange, near West Calder, was completed, and developments underground began to yield an output of shale. The driving of a pair of mines at Roman Camp, near Broxburn, was begun, but the producing stage had not been reached by the end of the year.

The production of crude oil and crude naphtha amounted to approximately $30\frac{1}{2}$ million gallons in 1936, being a slight increase on the figure for 1935. The total yield of refined liquid products was about the same as in 1935. The changes which were in progress during 1935 in the proportions of the various refined products obtained from shale continued during 1936, and the production of diesel oil rose by approximately seven million gallons, but the output of both motor spirit and burning oil (kerosene) was lower by rather more than three million gallons and two-and-a-half million gallons respectively. These changes were mainly due to the increase in the duty on imported heavy oil used in motor road vehicles from 1d. to 8d. per gallon.

Several new units were put into commission at Pumpherston Refinery, and further additions are almost complete.

It is estimated (on the basis of 40 lb. of the product to each ton of shale treated) that 25,000 tons of sulphate of ammonia were produced.

The production of bricks from spent shale continued to make satisfactory progress, and it is expected that a substantial increase in output will be realised in the near future.

It appears that modifications of the method of retorting shale may make it possible to increase the rate of throughput per retort, and this possibility is being investigated and developed.

Uphall Refinery, which operated on imported petroleum, has been closed.

The number of persos employed in the industry at the end of the year was 4,290, which is a further small increase on the figures for the previous two years which were 4,260 and 4,210, respectively.

IMPORTS, CONSUMPTION AND PRICES.

Taxation of Imported Petroleum Products.—There was no change in the rates of taxation of petroleum products during the year 1936, all imported oil used for road transport being taxed at the uniform rate of 8d. per gallon. On heavy oil used for other purposes the tax is 1d. per gallon.

Imports of Petroleum.—The imports of crude petroleum and refined products in 1936 distinguishing the countries from which the imports are consigned are shown in Table 65 of Appendix A. The greater proportion of the refined products are imported ready for use, but substantial quantities of crude petroleum are imported for refining, while some of the imported oils are partly refined and are subjected to further treatment in this country.

The following table compiled from returns supplied by the principal oil refining companies, shows the quantities of oils treated

and the products obtained:

Refinery Operations in Great Britain.

		1936.	1935. (Revised) 000 Gallons.	1934.
Oils treated.				
Imported crude Petroleum		486,713	473,193	475,259
Imported partly refined Oils		89,921	70,684	55,725
Scottish Shale Oil		30,359	29,582	31,472
Total	• •	606,993	573,459	562,456
Products obtained.				
Motor Spirit		125,249	133,774	144,799
Other Spirit		17,935	20,058	24,389
Kerosene		37,164	33,544	34,471
Gas Oil		63,228	51,270	53,423
Fuel and Diesel Oil		170,826	161,078	133,420
Lubricating Oil		26,637*	25,726*	24,704*
Other Oils†	• •	61		143
Total Liquid Products	• •	441,100	425,450	415,349
Total Solid Products	+0\	552,038	Tons 491,041	488,202
(Asphalt, pitch and wax, e	<i>(C.)</i>			

^{*} These figures represent the production of lubricating oils by refiners of imported crude and other heavy petroleum oils and do not include the manufacture of lubricating oils by merely blending or chemically treating imported lubricants.

† Mainly liquid bitumen.

Petroleum Products available for Consumption.—An approximation of the quantities of petroleum products available for consumption is obtained by adding to the imports the production in this country of refined products from imported crude and semirefined oils, and making allowances for the export and re-export of refined products. The figures in the following table have been calculated in this way, without however any adjustments being made for any changes in stocks at the beginning and end of the year.

Approximate quantity of the principal Petroleum Products (including Oils from Scottish Shale) available for Consumption in Great Britain and Northern Ireland.

				1936.	1935.	1934.
					(Revised)	
Descr	ription.			Mil	lion Gallons.	
Motor Spirit			• •	1,298 · 1	1,239.7	1,169.8
Other Spirit				27.1	23.3	26.3
Kerosene				217.5	$204 \cdot 1$	227.3
Gas Oil				147.5	131.9	154.7
Fuel and Diesel	Oil	• •		772 · 6*	757 · 8*	771.7*
Lubricating Oil				126.7	110 · 1	111.6
Total				2,589.5	2,466.9	2,461 · 4

Further details are given in Table 66 of Appendix A.

The above table includes the quantities of refined products obtained by the treatment of shale, but does not include oil produced from coal or coal products. Particulars of the production of light hydrocarbon oils from indigenous materials are given on page 15, from which it will be seen that the quantity of spirit so produced in 1936, excluding the amount from shale, was 85 million gallons. In 1934 and 1935 the quantities were 40 and 66 million gallons respectively. The total quantity of motor spirit estimated to be available for consumption in each of the past three years was, therefore, 1,209·8 million gallons in 1934, 1,305·7 million gallons in 1935, and 1,383·1 million gallons in 1936. Although no official information is available of the quantity of heavy oils produced from coal which was used as a fuel in 1936, it is known that the quantity was comparatively small.

^{*} Including fuel oil shipped for the use of steamers, etc. engaged in the foreign trade (including fishing vessels) which amounted to 302 million gallons in 1936, 311 million gallons in 1935 and 353 million gallons in 1934.

Prices of Petroleum Products.—The average declared value, c.i.f., of petroleum and petroleum products imported during the last three years is shown below.

V			Average 1	Declared c.i.	f. Value
			1936.	1935.	1934.
Descr	ription		Pen	ce per gallo	n.
Crude Oil		 	$2 \cdot 0$	$2 \cdot 0$	$2 \cdot 0$
Kerosene		 	2.8	2.9	2.6
Motor Spirit		 	3.8	3.5	3.3
Lubricating Oil		 	8.3	7.7	8.1
Gas Oil		 	$2 \cdot 4$	2.3	$2 \cdot 5$
Fuel and Diesel	Oil	 	1.8	1.7	1.7

It will be seen that with the exception of kerosene, the declared values of refined products were higher in 1936 than in 1935.

Wholesale and Retail Prices of Motor Spirit.—England, Wales and South Scotland Zone

			, , , , , ,	2000		2011					
			b	y or	ade u dinar orist.	У		. 3 dercial			Amount
Date of Cha	inge.		Inc	ludir	ıg Dı	ıty.	Inc	ludin	g Du	ty.	of Duty.
			Wh		Ret	ail.		ole- le.	Ret	ail.	
				i	Ex-pı	ump		Gallor	1.		Per Gallon.
1930.			S.	d.	S.			d.	S.	d.	d.
21st October			1	3	1	$4\frac{1}{2}$	1	1	1	$2\frac{1}{2}$	4
1931. 3rd March 28th April 22nd May 18th July 11th September	••	• • • • • • • • • • • • • • • • • • • •	1 1 1 1	$\begin{array}{c} 1\frac{1}{2} \\ 3\frac{1}{2} \\ 2\frac{1}{2} \\ 1\frac{1}{2} \\ 3\frac{1}{2} \end{array}$	1 1 1 1	$\begin{array}{c} 2\frac{1}{2} \\ 4\frac{1}{2} \\ 3\frac{1}{2} \\ 2\frac{1}{2} \\ 4\frac{1}{2} \end{array}$	0 1 1 0 1	$ \begin{array}{c} 11\frac{1}{2} \\ 1\frac{1}{2} \\ 0\frac{1}{2} \\ 11\frac{1}{2} \\ 1\frac{1}{2} \end{array} $	1 1 1 1	$\begin{array}{c} 0\frac{1}{2} \\ 2\frac{1}{2} \\ 1\frac{1}{2} \\ 0\frac{1}{2} \\ 2\frac{1}{2} \end{array}$	4 6 6 6 8
1932. 14th September			1	$6\frac{1}{2}$	1	71/2	1	41/2	1	51	8
1933. 17th May 3rd November		• •	1 1	4 5	1 1	5 6	1 1	2 3	1	3 4	8 8
1934. 22nd March			1	4	1	5	1	2	1	3	8
1935. 1st May			1	5	1	6	1	3	1	4	8
1936. (No chan	ige)		1	5	1	6	1	3	1	4	8

Note.—For the rest of Scotland generally, apart from the more remote districts and for the Islands, the prices were 1d. a gallon higher than those given in the above table.

No changes were made in the price of motor spirit during the year.

Wholesale and Retail Prices of Kerosene.—On 7th March, the wholesale prices in England and Wales quoted by the large oil companies were reduced by $\frac{1}{2}d$. per gallon. The price of "Standard White " in which most trade is done thus became 7d, per gallon delivered ex tank wagon in the Southern and Eastern Counties zone, and in the rest of England and Wales $7\frac{1}{2}d$. The price for "Water White" a superior grade was 1d. per gallon higher. Price concessions were made for bulk purchases, viz., 25 gallons up to 600 gallons 1d. per gallon, 600 gallons and upwards $1\frac{1}{4}d$, per gallon. Prices were, however, increased again 3 months' later, viz., 17th June, 1936, by $\frac{1}{2}d$. per gallon in all areas. On the 13th July a new schedule of prices came into operation, and a change was made in the price concessions from the same date. The schedule price for a minimum quantity of 20 gallons was fixed at $5\frac{3}{4}d$, per gallon in the Southern and Eastern Counties zone and $6\frac{1}{4}d$. per gallon for the rest of England and Wales. Concessions on the schedule prices of $\frac{1}{2}d$. per gallon are obtainable on bulk purchases of 200 gallons and upwards.

The price quoted by independent suppliers at the beginning of the year was $3\frac{7}{8}d$. per gallon ex ocean installations. In March the price fell to $3\frac{5}{8}d$, and remained at this level throughout the year except for a temporary rise in June. The average for the whole year was $3\frac{11}{16}d$, per gallon. The import duty of 1d, per gallon is included

in all of the above prices.

The retail prices of kerosene vary considerably according to district, and there is no official information available which would

enable representative figures to be given.

Wholesale Prices of Fuel Oil, Diesel Oil and Gas Oil.—On 21st February the price of diesel fuel oil for road vehicles was reduced by $\frac{1}{4}d$. per gallon, and the price, including the duty of 8d. per gallon for delivery by road tank wagon and rail tank car for a minimum quantity of 500 gallons, became 1s. 0d. per gallon in the following areas: in the London Inner Zone, i.e., within a 15-mile radius of Charing Cross and a 15-mile radius of Thames Haven (North of Thames only); within a 15-mile radius of Manchester and Liverpool; and within a 25-mile radius of Preston. For other areas in Great Britain the prices ranged to a maximum of 1s. $1\frac{1}{4}d$. per gallon.

No changes have been made during the year in the schedule of prices for diesel, fuel oil and gas oils used for other than road fuel purposes. The prices ruling, including the duty of 1d. per gallon, were as follows, for contracts of over 100 tons and under 400 tons ex ocean installations: Diesel oil, $4\frac{5}{3}d$. per gallon; light fuel oil, $4\frac{7}{3}d$. per gallon; gas oil, 4d. per gallon; and heavy fuel oil, $3\frac{7}{3}d$.

per gallon.

Retail Prices of Fuel Oil, Diesel Oil and Gas Oil.—There is no retail market for these oils, and purchases are usually made by contract.

APPENDIX A.—STATISTICAL TABLES.—CONTENTS.

(Except where otherwise stated the particulars relate to the Year 1936.)

PRODUCTION.

	al.

Table.		PAGE
1.	Tonnage and value of minerals produced in Great Britain during the years 1934–35–36	114
2.	Tonnage and value of minerals produced and number of persons employed (by Counties)	118
3.	Tonnage and value of metals obtainable by smelting British ores during the years 1934–35–36	122
4.	Tonnage of minerals produced at mines under the Coal Mines and Metalliferous Mines Acts, respectively, from 1873	123
5.	Tonnage of minerals produced at all mines, quarries, etc., from 1873	124
	Coal.	
6.	Output of coal in the principal colliery districts from 1873	126
7.	Tonnage and value of saleable coal produced in each colliery district	128
8.	Wet and dry cleaning plants in use, and quantity of cleaned saleable coal produced in each colliery district	129
9.	Weekly tonnage of coal (raised and weighed) in the principal districts and total number of wage-earners	130
10.	Coal Mines Act, 1930: Allocations made by the Central Council and output and disposals of the various districts	132
	Metalliferous Ores.	
11.	Tonnage and value of metalliferous ores produced in each district,	
11.	with percentage of metal content— (a) Iron Ore and Ironstone	134
	(b) Non-ferrous ores	135
	NUMBERS EMPLOYED, DAYS WORKED AND WAGES.	
	Employment.	
12.	Number of persons employed at mines, quarries, etc., in the years 1913, 1920, 1924, 1925 and from 1927	136
13.	Number of persons employed at all mines from 1873	138
14.	Number of persons employed at mines and quarries, classified according to the Acts under which the safety regulations are	100
15.	administered	139 140
16.	Number of days on which pits wound coal or were idle in each	142
17.	Number of persons employed at mines and quarries (except	144
18.	those producing coal), classified by age and sex Number of persons employed and tonnage of minerals produced at quarries from 1895	144
	Wages.	
19.	Percentages payable in excess of the basis wage rates in each district	147
20.	Main provisions of the district wages agreements in operation	148
21.	Subsistence wages paid	150
22.	Average earnings per shift of coal-miners for 1914 and from 1927 (by districts)	152
23.	Average quarterly earnings of coal-miners from 1930 (by districts)	154

	COSTS OF PRODUCTION, PROCEEDS AND PROFITS IN THE COAL-MINING INDUSTRY.	
Cable.		PAGE
24.	Costs of production, proceeds and profits of the coal-mining industry (on a per ton basis), and the tonnage of coal disposable	
25.	commercially from 1922	155
26.	industry (on a per ton basis) from 1930 (by districts) Quarterly summary of output, costs of production, proceeds and	156
	profits of the coal-mining industry	158
	DISTRIBUTION AND CONSUMPTION.	
27.	Coal. Tonnage of coal produced, shipped abroad, and available for consumption in 1913, 1920 and from 1931—	
	(a) General distribution of the coal available	160
2 8.	(b) Consumption of coal in Great Britain Tonnage and value of coal, coke and manufactured fuel, exported and imported, and tonnage of coal shipped for use as foreign	160
29.	Tonnage of coal exported to the various regions of the world, and foreign bunkers shipped, from principal groups of ports of	1 61
30.	Great Britain from 1932	162
0.1	principal destinations 1909–13 and from 1921	164
31. 32.	Tonnage and value of each kind of coal exported Coal, coke, and patent fuel transported by sea, rail and canal,	168
33.	from 1927	169
34.	obtained therefrom, and number and kind of ovens in use	170
35.	and value of coke sold	171
00.	briquettes made	171
	Other Minerals.	
36.	Home production of barytes, quantities imported and exported,	
37.	and total tonnage available for home consumption from 1922 Home production of iron ore and ironstone, quantity of ore imported and retained and total tonnage available for home	172
38.	consumption from 1913 Quantity and average net selling value of limestone, gravel and	172
	sand, igneous rocks, and sandstone obtained, distinguishing the principal purposes for which they were used	173
39.	Tonnage and value of principal minerals and manufactures thereof imported and retained, and exported	174
	PRICES.	
40.	Average value per ton, f.o.b., at the principal ports of coal exported in each month of 1936, and the annual average value	175
41.	for 1913-33-34-35-36 Average value per ton, f.o.b., and the percentage proportion of each principal kind of coal exported in 1913 and from 1927	175 176
42.	Market quotations of certain kinds of coal	177
	PLANT AND EQUIPMENT.	
43.	Plant and Equipment at mines under the Coal Mines Act in 1913,	178
44.	Particulars of (a) electrical equipment, (b) coal cutting machines, (c) conveyors and loaders used below ground, (d) safety lamps,	
	(e) explosives and shots fired, and (f) horses and ponies employed at mines under the Coal Mines Act, in each district	179

rabie.	PLANT AND EQUIPMENT—continued.	PAGE
45.	Quantity of various kinds of Explosives used, number of shots fired and number of miss-fire shots	181
	med and number of miss-me shots	101
	ACCIDENTS.	
46.	Number of separate fatal and non-fatal accidents at all mines,	100
47.	and number of persons killed and injured thereby Number of deaths and death-rates from accidents at mines under	182
	(a) the Coal Mines Act and (b) Metalliferous Mines Regulation Acts from 1873	184
48.	Number of persons killed and injured per 100,000 shifts actually	
10	worked at mines from 1922	185
4 9. 5 0.	Principal colliery disasters from all causes from 1901 Summary of principal colliery disasters caused by explosions of	186
00.	fire-damp or coal-dust for decennial periods from 1851	187
51.	Number of separate fatal and non-fatal accidents at quarries under	20.
	the Quarries Act, 1894, and number of persons killed and	
	injured thereby	188
52.	Number of deaths and death-rates from accidents at quarries from	100
5 3.	1895	189
00.	classified according to districts and mineral worked	190
54.	Number of persons injured at mines and quarries classified accord-	100
	ing to nature of injury and period of disablement	198
55.	Number of persons killed and injured per 1,000 persons employed	000
EG	at mines classified according to age	202
56.	Number of persons injured by accidents at mines under the Coal Mines Act from 1908	203
	mines net from 1000	200
	MISCELLANEOUS.	
E ==		
57.	Workmen's Compensation Acts: Number of cases of accident and disease and amount of compensation paid in the mining	
	and quarrying industries from 1908	204
58.	Workmen's Compensation Acts: Number of cases of disease	
	amongst miners for which compensation was paid from 1908	205
59.	Prosecutions and convictions for offences under the Mines and	200
60.	Quarries Acts	206
00.	and deputies' certificates	207
61.	Number of candidates attending examinations for certificates of	2208
	competency and for surveyors' certificates and number who	
	passed	208
62.	Number of candidates examined for certificates of competency	
	and for surveyors' certificates and number who passed from	209
63.	1913	210
64.	Particulars of development in the sinking of new pits and drifts—	210
01.	(a) Coal Mines Act	211
	(b) Metalliferous Mines Regulation Acts	212
	PETROLEUM.	
65.*	Imports of petroleum and its products into Great Britain and	
00	Northern Ireland	213
6 6.	Quantity of petroleum products imported, exported and retained	014
	for home consumption during the years 1933 to 1936	214

Nore.—Except for metalliferous minerals and a few others of special importance the produce of quarries less than 20 feet deep is excluded. The classification of the minerals on a use basis has been carried out with as much exactitude at the information available permits. In some instances it has been possible to sub-divide particular minerals between two or more groups; but in other cases the information available is not sufficient to enable this to be done, and the mineral is included in the group for which it is mainly used. TABLE 1.—Quantity and Net Selling Value of Minerals produced in Great Britain during the Years 1936, 1935 and 1934.

Lower Min 20	Quantity	Quantity of Mineral raised or quarried in	raised or	Total Net	Total Net Selling Value of Mineral at Mine or Quarry in	of Mineral y in	Average No of Mineral	Average Net Selling Value per ton of Mineral at Mine or Quarry in	lue per ton Quarry in
Milly of Millstat.	1936.	1935.	1934.	1936.	1935.	1934.	1936.	1935.	1934.
(a) Coal	Tons.	Tons.	Tons.	$\frac{\tilde{\xi}}{160,119,088}$	144,538,949	$\frac{\xi}{142,118,537}$	£ s. d. 0 14 0	£ s. d. 0 13 0	£ s. d.
(b) Iron Ore and Ironstone— West Coast Hematite (Non-phosphoric) Jurassic: Cleveland Other Sorts Coal Measures Other Occurrences	879,907 1,848,490 9,568,886 174,165 229,938	839,915 1,640,093 8,102,195 167,072 146,110	813,199 1,641,921 7,840,703 1,42,963 148,060	630,795 595,111 1,344,112 } 267,998	564,010 481,973 1,113,441 191,099	541,588 470,654 1,058,622 171,312	0 14 4 0 6 5 0 2 10	0 13 5 0 5 11 0 2 9	0 13 4 6 8 8 8
Total: Iron Ore and Ironstone	12,701,386	10,895,385	10,586,846	2,838,016	2,350,523	2,242,176	0 4 6	0 4 4	0 4 3
(c) Non-ferrous Ores: Tin Ore, dressed (Black Tin) Lead Ore, dressed Zinc Ore, dressed Copper Precipitate Other Non-ferrous Ores†	3.558 39,093 *7,869 138	3,535 52,859 2,116	3.224 68,122 988 23	382,312 423,464 *22,868 1,809 19,662	395,715 451,056 6,628 1,347 25,601	404,894 396,537 913 23,758	107 9 1 10 16 8 *2 18 1 13 3 10	111 19 0 8 10 8 3 2 8 17 9 10	125 11 6 5 16 5 0 18 6 13 4 4
Total Value: Non-ferrous Ores				850,115	880,347	826,406	Manage of the state of the stat		

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	9	11	0	6123			23	715	0 %	0	
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	15	7	3	000			3	18	ro 4	12	1
	0	0	0	000				0 1	00	3	
	28,232	185,061	315,033	80,188 113,061 656,333	1,377,908		765,658	131,225	21,664 28,148	14,566	1,027,522
	25,117	213,049	340,501	89,382 118,617 724,777	1,511,443		811,112	150,704	20,065	15,749	1,100,062
	25,493	232,665	368,214	100,423 133,753 842,140	1,702,688		876,558	194,445	28,215 26,023	16,153	1,230,512
	34,216	532,437	2,072,297	487,624 713,659 2,015,592			690,129	152,558 47,993	87,074 119,848	4,222	ı
	31,146	576,365	2,170,576	545,930 695,291 2,283,894	1.		707,572	175,847 57,160	77,113	4,433	
	32,962	637,456	2,446,683	615,519 802,140 2,524,153	,		746,922	213,432 66,509	107,029	4,469	1
d) Minerals (other than Metal- liferous Ores) used mainly in Iron and Steel Making and other	Smelting Processes: Fluorspar Silica Stone (including Ganis-	ter and Silica Sand) used as Refractory Material	Limestone and Dolomite for use as a fluxing agent	Dolomite for use as a Refractory Material Moulding and Pig-bed Sand Fireclay	Total Value: Minerals (other than Metalliferous Ores) used mainly in Iron and Steel Making and other Smelting Processes	(e) Minerals used mainly in China. Pottery and Glass	Manufacture :	Potters' Clay (including Ball Clay)	Limestone for use in glass- making Sand for use in glassmaking	Chert for use in the china and pottery trades	Total Value: Minerals used mainly in China, Pottery and Glass Manufacture

* In addition, 6,688 tons of zinc ore were obtained in 1936. The value of this ore, which is to be subjected to further treatment before sale, is not yet known, but the relevant figures will be included in future reports.

† Under this heading are comprised the following dressed ores the production of which is shown in Table 5:—Tungsten Ore and Gold Ore.

TABLE 1—continued.

Kind of Mineral	Quantit	Quantity of Mineral raised or quarried in	raised or	Total Net at N	Total Net Selling Value of Mineral at Mine or Quarry in	of Mineral y in	Average Net Selling of Mineral at Mine		Value per ton or Quarry in
, AMILIA OL MINISTORI.	1936.	1935.	1934.	1936.	1935.	1934.	1936.	1935.	1934.
(f) Minerals used mainly for Building and Roadmaking, Lime, Cement, Concrete, etc.:	Tons.	Tons.	Tons.	72	**	7	£ s. d.	£ s. d.	£ s. d.
Clay, Shale, etc. Gravel and Sand* Igneous Rocks* Sandstone* Slate† Chalk Chert and Flint Limestone*	24,537,641 17,795,623 9,896,954 3,541,641 297,998 9,091,358 184,362 12,650,962	23,251,904 14,679,037 9,162,839 3,288,177 302,906 8,254,730 159,817 11,545,718	21,920,280 13,161,560 8,839,985 3,177,498 290,455 7,681,698 157,356 10,956,707	2,055,449 2,399,943 3,016,679 1,390,958 1,733,024 598,746 35,566 2,560,402	1,961,830 1,999,080 2,759,735 1,285,230 1,737,467 563,961 30,846 2,329,406	1,865,883 1,875,748 2,633,021 1,250,775 1,687,205 526,764 27,525 27,525	0 1 8 0 6 1 8 0 6 1 1 0 7 10 5 16 8 0 3 10 0 3 10	0 1 8 0 6 0 0 7 10 5 14 9 0 3 10 0 4 0	0 2 10 0 2 10 0 5 11 0 7 10 5 16 2 0 1 4 4 0 3 6 1 6
Raw Stone Dressed, roughly ground or broken stone	.455,567 546,905	427,010	410,172	194,161	183,710	176,131	0 8 6	0 8 7	0 10 4
Total Value: Minerals used mainly for Building and Roadmaking, Lime, Cement, Concrete, etc	1	1	1	14,257,745	13,124,075	12,555,141			
(g) Other Minerals: Arsenic (White) and Arsenic Soot Iron Pyrites	153 4,623	172 4,194	185 2,145	2,081	2,458 504	2,835	13 12 0 0 3 6	14 5 10 0 2 5	15 6 6 0 3 4

5	9-1-81	0 9 8 0 0	6	000	1	1
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7	51 8 8 8 8 8	49 61 9	600	1330		
	00000	0000	7	010		
63,589	20,112 45,795 20,689 11,135 5,321	184,099 49,479 4,308 409,712	551	271 075 707 324	356	046
63,	20, 45, 11, 5,	84, 49, 109,	982,551	65,271 22,075 79,707 85,324	2,052,356	000
		1 4	0,		2,0	183,166,294 165,582,581 162,200,046
26	194 168 168 169 169	352 71 74 12	555	86 838 817	88	189
69,226	22,794 46,468 23,382 9,769 6,863	205,352 54,071 2,974 418,112	962,555	70,786 21,338 84,213 76,317	2,077,182	82,5
		61 4	6		2,0	65,5
	32992	1808	20	1481	0	1 1
62,681	21,669 49,135 25,556 15,069 6,723	204,261 67,328 2,300 433,173	379,587 631,202	79,721 22,334 79,898 84,611	2,168,130	6,25
9	01 44 01 H	20 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	37	0000	3,16	3,16
_			~		66	18
48,131	5,548 20,315 22,280 60,156 29,487	915,076 152,751 8,070 ,400,775	886	1,694,703 17,371 88,677		
48,	29,00,00	915,076 152,751 8,070 ,400,775	793,988	394, 17, 88,		
		1,4		1,6		
06	54 56 56 97	53	00	15		
51,290	6,288 20,554 26,156 43,566 35,197	1,020,453 174,228 4,622 1,408,371	831,800	,838,715 16,309 111,523	1	
		1,0	Ø	8,1		
	18160	0 & 4 10	35	610		_
46,001	5,731 21,338 27,681 64,419 34,000	,013,529 201,748 3,494 ,409,415	324,435 567,063	8,79 7,29 3,58		
4	20000	1,013,529 201,748 3,494 1,409,415	32,	1,908,799 17,291 103,580		
			<u>.</u>			
:	: : : : :	: : : :	Salt obtained from Brine— (a) Vacuum (b) Other	used for purposes other than Salt making Rock stone stone st minerals	:	:
į.			Brij	0 0	als	
erit		ses	omo ii	king	iner	•
Vith	check nd	rpo	d fr m	pur ma	ir M	(e)
rou	ound— Bleached Unbleached r and Sand R Rocks	for 1 pu	ine cuu her her	For Salt	Othe	alu
s an	Ground— Bleached Unbleach spar el and Sand ous Rocks	one nica property pro	Lit obtaine (a) Vacuu (b) Other	an an cock one nine	**	2
Barytes and Witherite—Not Ground§	Ground— Bleached Unbleache Calcspar Gravel and Sand Igneous Rocks	Limestone for: Chemical purposes Other purposes Mica Clay Oil Shale	Salt, Dillie Salt obtained from Brine (a) Vacuum (b) Other Salt contained in Brin	salt, Rock¶ Sandstone	alue	Tota
Baı	Cal Gra	Lin Oill	on or	Sal Sar Oth	Total Value: Other Minerals	Grand Total (Value)
					Tot	Gra

* For further particulars see Table 38.

Including in 1936, 31,569 tons of crude or roughly dressed state, valued at £5,932, used chiefly for building, metalling roads, hedging, etc. It was obtained, for the most part, from quarries in the Counties of Aberdeen and Banff and in the Isle of Man. Dressed state for building and monumental purposes is also included, but the quantity and value of such state cannot be stated.

This was made from rock salt purchased from England, Ireland or elsewhere and Including 8,751 tons of Witherite in 1936, 9,409 tons in 1935 and 10,412 tons in 1934.
The output of "Scotch Sait" in 1936 amounted to 2,125 tons, the value of which at Works was £13,116. This was made from rock sait purchased from Englan dissolved in sea water. About 97 per cent. of the final product was obtained from the rock sait.

In order to avoid the possible disclosure of information relating to individual firms the output value of the following minerals has been aggregated above, viz.,

	0.	Quantity Produced	d.	;		Quantity Produced	
Mineral.				- Mineral.	0001	1000	1001
	1936.	1935.	1934.		1936.	1933.	1934.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
Alum Clay and Shale	2,397	1,656	2,274	:	1,086	1	11.11.
Bog Ore. Iron Ore and Ironstone used other-				:	Particulars are	not available to I	publication.
wise than for iron making	7,224	7,986	602'6	:	7,298	8,315	7,393
Celestine (Sulphate of Strontium)	5,771	4,510	9,440	: : .		10	67.

In addition small quantities of Natural Gas were obtained in each year.

TABLE 2.—Quantity and Net Selling Value of Minerals raised and Number Workings in each County of

Note.—For particulars of the uses to which certain

			_	_			T	NOTE.—For	particulai	is of the t	ses to white	II CCI tail
										QUA	NTITY OF	MINERALS
		Pri Metallif	ncipal erous Or	es.								Отнея
COUNTY		stone.			erite.					Gravel	and Sand.	18
	Coal.	Iron Ore and Ironstone.	Lead Ore, dressed.	Tin Ore, dressed (Blạck Tin).	Barytes and Witherite.	Chalk.	Chert and Flint.	Clay, Shale, &c.	Fireclay.	Moulding and Pig-bed Sand.	Other Sorts.	Gypsum (including Anhydrite).
ENGLAND:	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons,
Bedford	_	_				744,523		3,106,582		19,967	380,969	1
Berks	erene.				The same of the sa	6,279	50	255,713	_		146,578	_
Buckingham	_					12,717	Ę	1,167,271	*****		649,257	_
Cambridge	- 1		_	-	-	399,769	3,982	1,113,002			27,114	_
Chester	15,364		_			_	-	611,179	8,903	9,043	149,388	
Cornwall			_	3,558	-	_	1,214	27,542	1,678	498		
Cumberland	1,189,948	749,820				-		85,556	16,330	50	9,604	
Derby	13,277,556	160 -	20,024	-	6,021		7,366	637,413	135,505	12,065	284,512	
Devon		-		‡	18,521		914	477,809	1,090	268	125,359	1
Dorset					-	760		200,966	_	-	263,003	5
Durham	31,372,566		230	-	5,350	-		761,067	257,154	7,265	699,976	318,795
Essex	-		-	-	-	1,869,889	8,909	408,871	_	18,832		
Gloucester	1,533,880	-	_	-	P007940731	_		286,884	11,528		26,240	
TT C 1	-	-		_	1 mil	96,676	1,847	221,986			78,118	
TT 10 1	_			-	_	-		19,012		70	10,120	
**			_		_	22,966	_	39,063		70	1,297,010 41,057	
Kent	2,025,604		_		_	4,373,684	41,055	1,997,453 901,290		92,734	1,640,071	
Lancaster	14,644,443	130,087				4,373,004	41,000	2,435,255	129,461	54,079	617,370	
Leicester	2,692,122	929,940						752,318	39,445	04,073	93,654	
Lincoln		4,020,252				160,215	619	154,045	20,473	6,009	65,849	
Middlesex	_	2,020,202				8,336	7	76,000			2,393,432	
Monmouth	10,052,608	324		*****			·	123,246	39,038	_		_
Norfolk		_				16,475	95,018		-	39,174	364,294	_
Northampton		3,252,342						342,371			147,382	
Northumberland	14,427,260		1,198		4,330			160,994	109,327	500	85,250	-
Nottingham	15,059,284			-				453,776	-	201,748	327,215	*306,800
Oxford	_	695,703				98,432	_	121,063	_	_	4,073	
Rutland		670,649						41,700	-	-		_
Salop	705,972	118			13,857	-		130,099	46,968	17,487	37,896	_
Somerset	747,023	Name of Street		_			6,435		-		421	
Stafford	13,619,326	155,568						1,578,633	350,072			
Suffolk	-	marant .		_	3.—	91,498	10,881	61,803	-	4,430	181,135	
Surrey						104,961	475	191,176	711	1 700	1,471,034	•
Sussex Warwick	E 004 010	000		-		460,702	2,314	262,555	106 967	1,706	674,194 740,178	
	5,634,019	829	30		558		_	1,012,497	106,267	_	192	
Westmorland		-	30	_	558	9,545	75	31,051			17,453	
Worcester	315,898	115				5,343		287,238	79,129	89,141	188,761	
York	42,476,133	1,849,291	56		887	612,731	1,966	1	334,008	22,965		_
									-,			
Total	169,789,006	12,455,038	23,243	3,558	49,524	9,090,158	183,120	23,075,849	1,687,087	720,484	16,863,124	1,002,472

^{*} Gypsum produced in Sussex is included with Staffordshire, and that produced in Derby is included with Nottingham.

† Less than half a ton.

of Persons Employed at all Mines and Quarries and certain other Mineral Great Britain during the Year 1936.

of the Minerals are put see Tables 1 and 38.

	000 01	- 100							H H	D	- T-		
AISED (see also pa	ge 122							ALL	PERSONS	EMPLO	YED.	
INERAL	s.								VALUE OF	s (and	s (and	eminoral management and a second	
	bn		ing	Salt.	į	Sands	stone.		٥٠ ا	Mines es).	Mines ies).		
Igneous Rocks.	Limestone (including Calespar).	Ochre, Umber, &c.	Potters' Clay (including Ball Clay).	Brine.	Rock.	Silica Stone (including Ganister and Silica Sand) used as Refractory Material.	Other Sorts.	Slate,	TOTAL NET SELLING MINERALS RAISED.	Below Ground at M Inside at Quarries)	Above Ground at Mir Outside at Quarries)	Total Number.	COUNTY.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£			-	ENGLAND:
	27,420	-		_		120,866	351		252,682	584	193	777	Bedford.
1,296	13,971	Product					- 1	-	54,591	245	97	342	Berks.
-		_		_		1,650	100		139,313	280	206	486	Buckingham.
_	254				-	-			72,400	172	41	213	Cambridge.
-				2,269,418	17,291	20,655	192,329		965,025	571	2,043	2,614	Chester.
942,916		-		-		-	14,737	17,154	1,732,271	3,983	3,056	7,039	Cornwall.
193,088	464,740	-	_	-		2,874	6,797	3,631	1,639,805	5,555	1,960	7,515	Cumberland.
229,606	4,249,980	84	420	1	-	40,713	171,571		10,599,711	38,247	12,616	50,863	Derby.
326,227	497,467	918	112,321			-	166,918	477	551,908	1,933	1,041	2,974	Devon.
	90,929	-	95,799			-	-		302,891	971	331	1,302	Dorset.
147,921	1,237,601	_		†154,082	_	70,929	39,285		21,113,492	88,378	23,755	112,133	Durham.
			_						332,257	617	303	920	Essex.
_	824,247	929	-	_		_	89,886		1,417,298	5,658	1,440	7,098	Gloucester.
	5,411			_			200		45,152	221	76	297	Hants.
31,832	24,048	_					802	_	20,675	104	13	117	Hereford.
							-		182,391	522	152	674	Hertford.
_	18,632	_	-		_		-0.50		75,286	196	61	257	Huntingdon.
 FO 011	287,399	_				8,850	356	11.005	2,327,927	7,868	1,697	9,565	Kent.
50,211	410,929	_		†308,280		30,550	623,224	11,065	13,057,563	47,110	17,472	64,582	Lancaster.
124,775	227,610		1,311				336		2,512,556	8,688	3,473	12,161 1,517	Leicester.
_	198,971	_	_					_	644,959	1,262 220	255 301	521	Lincoln. Middlesex.
_	107 515		-		_	309	00 500	-	351,507		1	34,608	Monmouth.
	167,515		· _		_	6,057	33,522 155	_	6,913,471	29,192 496	5,416 100	596	Norfolk.
	161,673		_			3,120	7,111		81,442 564,291	1,217	503	1,720	Northampton.
532,327	54,245					82	32,556		9,320,418	35,019	11,296	46,315	Northumber'd.
	291,231					5,777	5,890		10,472,804	36,106	10,965	47,071	Nottingham.
	294,544				_	576	21		104,247	206	96	302	Oxford.
_	201,952							-	120,120	242	53	295	Rutland.
382,848	225,367					_	40,020		827,248	2,886	1,092	3,978	Salop.
17,825	1,582,790	4,962	936			_	93,625	899	1,013,634	4,070	1,329	5,399	Somerset.
222,098	188,508		2,645	†		20,724	23,539		11,359,374	38,691	13,688	52,379	Stafford.
					Parcel	620	-		46,325	259	36	295	Suffolk.
			_		married .		15,404		279,395	606	282	888	Surrey.
	141			_		_	15,415	_	191,749	621	111	732	Sussex.
151,081	294,039	_				_	354,266		4,912,931	13,454	5,187	18,641	Warwick.
109,737	220,743		-		*****	-	19,065	3,145	130,733	467	184	651	Westmorland.
-	32,298	_		_			961	_	43,388	196	132	328	Wilts.
190,067	32,994			68,517	anaurome.	2,170	10,416		412,649	1,155	606	1,761	Worcester.
106,836	1,656,862			†		97,989	1,012,874		30,945,590	116,554	34,060	150,614	York.
760,691	13,984,511	6,893	213,432	2,800,297	17,291	434,511	2,971,732	36,371	136,131,469	494,822	155,718	650,540	Total.
4 D.:	na Calé mas	dunad	in Vorl	abino io in	aludad s	with Durh	om and t	hat nea	duced in Staf	Fordobino e	nd in th	a Tala of	Man is included

[†] Brine Salt produced in Yorkshire is included with Durham, and that produced in Staffordshire and in the Isle of Man is included th Lancashire.

TABLE 2

												DLE 4
										Qua	NTITY OF I	Minerals
		Pri Metallife	ncipal rous Or	es.								Other
COUNTY.		stone.	ť		herite.					Gravel a	nd Sand.	ing
	Coal.	Iron Ore and Ironstone	Lead Ore, dressed	Tin Ore, dressed (Black Tin).	Barytes and Witherite.	Chalk.	Chert and Flint.	Clay, Shale, &c.	Fireclay.	Moulding and Pig-bed Sand.	Other Sorts.	Gypsum (including Anhydrite).
WALES:	Т	Tona	Tons.	Tons.	Tons.	Tons.	Tons,	Tons.	Tons.	Tona	Tona	Tons.
Anglesey	Tons.	Tons.			- 1					Tons.	Tons.	
Brecon	511,289		63		=			1,386 51,812	_	_	11,519	_
Cardigan	0.020.201			_	_	_		35,659	11 200		52	-
Carmarthen Denbigh	2,038,381 2,619,605	_						168,427 184,233	11,322 24,209 40,347		94,935	
Flint Glamorgan	218,997 21,244,027	229,938	15,773			1,200	5,711	184,233 289,001	40,347 62,794	=	214,824	
Merioneth				_	315	_			-			
Montgomery Pembroke	39,874			_	- 313		=	16,000 22,676			_	_
Radnor						-		300				
Total	26,672,173	229,938	15,836		315	1,200	5,711	769,494	138,672		321,370	
SCOTLAND:												
Aberdeen					_	_		16,600	_	130	61,933	
Angus (Forfar)		_				_		16,880		_	8,853 700	
Argyll Ayr	*4,427,603	179	_	219,000	†23,231			9,768	117,175	11,783	52,065	
Banff Berwick			_		_	_	_	_				
Bute					†	-			-	_	2,233	
Caithness	442,603	-	_					_		149	7,406 8,737	_
Dumbarton	511,762		_		=	_		9,589	‡45,841 —	7,067	8,737 2,947	
Dumfries East Lothian	1,106,383	_			_	_		26,901	1,766			_
(Haddington) Fife	*8,299,842	2,399						156,046	51,491		46,437	
Inverness				_			_			_	46,437 8,706 1,831	
Kincardine	_	_			=	_	_			_		
Kirkeudbright Lanark	9,097,758	7,252	— 14					147,760	138,234	57,129	4,420 291,848	
Midlothian	3,737,179	1,178	_	-			-	141,575	803		141,225	-
(Edinburgh) Moray	-	-		_			_	7,200			886	
Nairn	_					_	_	_		_	50	
Orkney Peebles						-				_	182	
Perth Renfrew		_	_			_		20,250	‡	_	19,023 1,910	_
Ross & Cromarty	_						_		<u>-</u>		1,910 7,749	
Roxburgh	_		-						_	_		_
Selkirk					_	_	_			_		
Stirling	1,680,268	1,104						7,584	300,802	5,230	90,863	
Sutherland West Lothian	2,683,779	4,298		_				5,744 107,633	42,282		713 13, 277	_
(Linlithgow) Wigtown			_	_		_	_	1	_	168		_
Total	31,987,177	16,410	14		23,231			673,530	698,394	81,656	774,126	-
ISLE OF MAN			_					18,768			30,269	
Grand Total	228,448,356	19 701 388	39 093	3,558	73.070	9 091 358	188 831	24,537,641	9 594 159	802 140	17,988,889	1 002 479

Coal produced in Dumfries is included with Ayr, and that produced in Sutherland with Fife,
 Barytes and Igneous Rocks produced in Bute are included with Ayr.

-continued.

CAISED (S	see also pa	ge 122	2).						ALL	PERSO	NS EMPI	OYED.	
linerals.									VALUE OF	s (and	s (and		
Igneous Rocks.	Limestone (including Calespar).	Ochre, Umber, &c.	Potters' Clay (including Ball Clay).	Brine,	Rock.	Silica Stone (including Ganister and Silica Sand) used as Reperture of fractory Material.	Other Sorts,	Slate,	TOTAL NET SELLING V. MINERALS RAISED.	Below Ground at Mines Inside at Quarries).	Above Ground at Mines Outside at Quarries).	Total Number.	COUNTY,
Tons. 12,834 925,728 23,456 27,301 42,347 — 97,967 85,764 81,203 142,821	121,564 519,064 208,841 298,864 214,425 1,076,056 45,648 19,050	4 — — — — — — — — — — — — — — — — — — —		Tons.	Tons,	Tons. 14,222 5,994	Tons. 21,127 24,744 — 30,549 85,750 21,157 35,395 139,237 65,790 12,792 1,813 1,126	700 3,455 	£ 48,942 518,039 1,469,307 14,950 2,268,810 2,070,586 461,034 16,513,747 450,843 38,295 73,700 49,010	119 1,827 3,379 93 8,442 7,724 1,176 66,797 1,274 111 340 113	83 532 4,116 11 2,362 2,490 546 14,151 1,557 60 183 86	202 2,359 7,495 104 10,804 10,214 1,722 80,948 2,831 171 523 199	WALES: Anglesey. Brecon. Caernarvon. Cardigan. Carmarthen. Denbigh. Flint. Glamorgan. Merioneth. Montgomery. Pembroke. Radnor.
,439,421	2,701,785	405				147,284	439,480	221,983	23,977,263	91,395	26,177	117,572	Total.
385,832 295,297 101,158 †380,367 16,588 99,488 † 27,368 39,310 89,483 50,295 272,743 16,668 81,927 25,030 132,458 508,115 319,343	16° 15,725° 1,526° 54,407° 52,350°					13,957	5,674 12,247 20 10,985 21,077 286 — 7,746 — 40,176 — 1,208 4,470 — 29,345 27,743	5,424 9,318 3,859 580 	144,362 70,894 84,856 †2,867,386 19,861 25,173 11,558 302,163 448,939 387,084 658,206 5,332,587 7,549 18,773 9,902 47,311 6,540,367 2,445,004	688 254 347 8,326 6177 96 61 1,043 1,043 2,249 16,895 14 198 21,688 7,976	391 94 275 2,779 17 25 22 22 18 196 558 387 711 5,426 11 7 43 135 6,224 2,876	1,079 348 622 11,105 194 121 348 961 2,158 1,430 2,960 22,321 75 176 57 333 27,912 10,852	Aberdeen. Angus (Forfar). Argyll. Ayr. Banff. Berwick. Butte. Caithness. Clackmannan. Dumbarton. Dumfries. East Lothian (Haddington). Fife. Inverness. Kincardine. Kinross. Kirkcudbright. Lanark. Midlothian (Edinburgh).
11,997 3,113 — 25,831 163,032 141,961 9,437							15,008 116 23,635 — 10 6,869 22,540	1,585	8,586 1,199 4,025 7,696 51,483 49,040 10,033	54 8 33 34 160 139 60	10 3 2 46 51 61 24	64 11 35 80 211 200 84	Moray. Nairn. Orkney. Peebles. Perth. Renfrew. Ross & Cro-
78,403 6,054 160,020 5,165 63,164 71,027	2,950 1,948					29,154 — — —	4,851		17,146 2,493 1,380,978 8,368 2,030,023 15,357	121 16 4,536 43 6,087	11 8 - 1,543 20 1,970	132 24 	marty. Roxburgh. Selkirk. Shetland. Stirling. Sutherland. West Lothian (Linlithgow). Wigtown.
,635,646	370,113	_				55,661	234,006	20,766	23,008,402	74,001	23,965	97,966	Total.
95,196	6,742			§			3	17,978	49,160	199	135	334	ISLE OF MAN
930,954	17,063,151	7,298	213,432	2,800,297	17,291	637,456	3,645,221	297,098	183,166,294	660,417	205,995	866,412	Grand Total.

[‡] Fireclay produced in Renfrew is included with Dumbarton, § Included with Lancashire.

NOTE TO TABLE 2

Note.—The following Minerals were also produced at Mines, Quarries, &c., in Great Britain in addition to those detailed in the preceding Table.

County,	Mineral.	Quantity raised in 1936.	County.	Mineral.	Quantity raised in 1936.
ENGLAND:		Tons.	ENGLAND—cont.		Tons.
Bedford	Bog Ore	1,097	Somerset	Fuller's Earth	*
	Arsenic (White) and	4.50	Surrey	Fuller's Earth	*
	Arsenic Soot China Clay	153 673,932	Sussex	Natural Gas	*
Cornwall	China Stone	66,509	Warwick	Iron Pyrites	4,484
L	Mica Clay Tungsten Ore, dressed	2,395 189	Westmorland	Diatomite	1,086
	<i>a</i> 0 D		Wilts	Iron Ore†	2,230
Cumberland	Zinc Ore, Dressed	81	York {	Alum Shale	1,874
Derby {	Fluorspar Iron Pyrites Petroleum Zinc Ore, dressed	16,574 139 42	WALES:	Fluorspar	5,171
	Zinc Ore, dressed	‡5,319	Anglesey	Copper Precipitate	54
Devon	China Clay	72,990	Flint	Zinc Ore, dressed	2,469
Devon	Copper Precipitate Mica Clay	1,099	Glamorgan	Natural Gas	*
	Aliana Clara	000	Merioneth	Gold Ore, dressed	6
Durham {	Alum Clay Fluorspar	383			
	Calastina (Calabata at		SCOTLAND:		
Gloucester	Celestine (Sulphate of Strontium)	5,771	Ayr	Alum Clay	140
Kent	Ironstone†	120	Midlothian (Edinburgh)	Oil Shale	162,465
Northampton	Bog Ore	3,777	West Lothian (Linlithgow)	Oil Shale	1,246,950

^{*} This information is not available for publication. \dagger Used otherwise than for iron-making. \ddagger See * note to Table 1 on page 115.

Table 3.—Approximate Quantity of Metal obtainable by Smelting Ores raised in Great Britain during the Years 1936, 1935 and 1934.

Note.—In calculating the approximate quantity of metal obtainable the following allowances have been made for losses in smelting: Lead, 5 per cent.; Zinc, 22 per cent. Silver in one containing less than 3 ozs. of that metal per ton of dressed mineral is ignored, and $\frac{1}{4}$ oz. of silver is assumed to remain in each ton of desilverised pig lead.

		193	36.	193	35.	19	34.
Description of Me	etal.	Quantity.	Value at the Average Market Price	Quantity.	Value at the Average Market Price.	- Quantity.	Value at the Average Market Price.
Copper Gold (fine) Iron Lead Silver Tin Zinc		Tons. 62 (ozs.) 0·7 3,810,416 28,968 (ozs.) 76,885 2,099 3,314†	£,631 5 14,546,771* 509,837 6,427 429,525 49,448† 15,544,644	39,169 (ozs.) 92,848 2,050	£ 1,755 1,052 11,092,487* 557,669 11,219 462,728 12,788	Tons. 14 (ozs.) 51 3,176,054 51,126 (ozs.)138,974 1,999 347	£ 467 351 10,572,631* 558,978 12,287 460,511 4,739 11,609,964

^{*} This is calculated on the average declared value of the pig-iron exported.

† See * note to Table 1 on page 115.

TABLE 4.—Tonnage of the Principal Minerals raised at Mines under the Coal Mines Act, and the Total Tonnage of Minerals raised at such Mines and at Mines under the Metalliferous Mines Regulation Acts, in Great Britain* from 1873.

Note.—For the number and cause of fatal accidents at mines from which this mineral was raised see Table 47. Comparative particulars of the number of persons employed are shown in Table 13.

			Total Qua	ntity of Mine	ral raised fro	om Mines u	nder the—	
	Decennial Period or Year.			Coal M	ines Act.			Metal- liferous
		Coal.	Fireclay.	Ironstone.†	Oil Shale.	Other Minerals.	Total.	Mines Acts.‡
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
	1873-1882	138,086,800	1,875,287	11,514,447	712,928	40,209§	152,221,629	4,278,577
	1883-1892	169,921,705	2,079,818	8,634,571	1,835,174	175,239	182,646,507	4,110,068
age.	1893-1902	203,314,691	2,628,168	7,366,505	2,192,597	288,874	215,790,835	3,637,745
Annual Average.	1903-1912	253,967,596	2,758,318	7,787,910	2,735,153	481,157	267,730,134	3,275,844
74	1913-1922	241,081,755	1,910,359	5,201,170	2,875,769	385,593	251,454,646	2,391,993
	1923-1932	233,096,907	1,773,744	2,584,846	2,133,745	431,968	240,021,210	2,365,022
1913		287,411,869	2,585,763	7,709,624	3,280,143	623,954	301,611,353	3,236,490
1919		229,743,128	1,849,690	4,949,944	2,759,165	299,012	239,600,939	2,104,252
1920		229,503,435	1,966,040	4,985,410	2,829,515	352,279	239,636,679	2,334,398
1921		163,216,505	1,352,244	1,340,275	1,850,649	282,876	168,042,549	1,085,994
1922		249,584,085	1,643,777	1,854,792	2,586,656	302,386	255,971,696	1,735,291
1923	}	275,965,702	1,904,207	2,867,144	2,844,816	376,378	283,958,247	2,272,498
1924		267,061,027	1,959,118	2,991,149	2,843,945	446,620	275,301,859	2,260,651
1925		243,146,880	1,966,992	2,899,134	2,458,052	436,268	250,907,326	2,151,492
1926		126,230,165	1,253,842	1,212,927	1,959,795	347,456	131,004,185	1,616,634
1927		251,197,384	2,147,072	3,115,120	2,047,263	489,444	258,996,283	2,532,300
1928		237,450,878	1,998,520	3,013,602	2,038,114	442,931	244,944,045	2,599,158
1929		257,887,551	1,915,878	3,552,477	2,023,609	425,409	265,804,924	3,232,393
1930		243,862,100	1,789,088	2,866,601	2,020,510	435,340	250,973,639	2,797,354
1931		219,439,620	1,483,532	1,820,369	1,732,746	433,101	224,909,368	2,048,177
1932		208,727,764	1,319,188	1,509,939	1,368,596	486,738	213,412,225	2,139,563
1933		207,105,847	1,421,339	1,424,864	1,396,988	486,664	211,835,702	2,332,057
1934		220,721,028	1,697,202	2,151,532	1,400,775	551,496	226,522,033	2,627,824
1935		222,236,855	1,951,221	2,313,579	1,408,371	574,122	228,484,148	2,704,457
1936		228,434,148	2,148,911	2,605,572	1,409,415	610,632	235,208,678	2,856,135

[•] Including particulars for Ireland up to the year 1921.

† For the total quantity of ironstone and iron ore raised see Tables 5 and 37.

‡ The tonnage under the Metalliferous Mines Acts relates in some cases (e.g., tin ore, slate, &c.) to dressed mineral and not the total quantity of rock mined.

§ Average for 8 years only, and so far as particulars were furnished.

∥ The majority of the coal mines were idle during a considerable period of the years 1921 and 1926 owing to protracted disputes. In consequence, employment at iron mines and at certain other mines was reduced.

TABLE 5.—Tonnage of the Principal Minerals obtained from all Mines,

Note.—Complete returns from all quarries more than 20 feet deep are only available from the year 1895, when the Reports of the Secretary for Mines and for the period up to 1913 in the General Report on Mines and Quarries for 1913, Tables 1 and 38 also give some details of the principal uses to which a number of the more widely distributed minerals.

						I	/Ietallifero	us Ores.			
	Decennial Period or Year.		Coal.	Iron Ore and Ironstone.	Tin Ore, dressed (Black Tin).	Lead Ore, dressed.	Zinc Ore, dressed.	Tungsten Ore, dressed.	Uranium Ore.	Copper Ore, dressed.	Copper Precipi- tate.
	1873-188	32	138,086,800	16,338,805	14,114	73,357	25,519	30	-	64,733	408
age.	1883-189	92	169,921,705	14,315,492	14,432	49,651	24,628	117		20,267	342
Annual Average.	1893-190)2	203,322,846	13,204,252	8,741	34,480	22,182	65	35	7,305	267
ual	1903-191	12	253,983,464	14,768,388	7,534	28,076	19,108	254	45	. 5,023	233
Ann	1913-192	22	241,109,385	12,317,805	5,716	16,539	8,419	191	111	855	191
	1923-198	32	233,125,846	9,842,821	3,511	21,942	1,603	39	‡	45	129
1925			243,176,231	10,142,878	4,032	15,578	1,603	1	114	-	148
1926			126,278,521	4,094,386	3,878	19,076	1,944	19		155	128
1927			251,232,336	11,206,601	4,321	20,428	2,911	12		270	206
1928			237,471,931	11,262,323	4,844	18,771	1,553	96	‡	_	104
1929		• •	257,906,802	13,214,943	5,640	23,260	1,811	27	‡	13	104
1930			243,881,824	11,627,233	4,146	25,380	1,348	128	-	_	75
1931			219,458,951	7,625,860	920	29,502	409	100	-		109
1932			208,733,140	7,328,190	2,025	40,633	8	2	_	12	90
1933			207,112,243	7,461,720	2,337	49,056	9	11	_	-	64
1934			220,726,298	10,586,846	3,224	68,122	988	190	-	_	23
1935			222,248,822	10,895,385	3,535	52,859	2,116	219	_		77
1936			228,448,356	12,701,386	3,558	39,093	7,869‡	189			138

						7,000		0	Other M	inerals—
Decennial Period or Year.							Clay, Shale, etc.			
		Oil Shale.	Salt.	Slate.	Chalk.	Chert and Flint.	Alum Clay and Shale.	China Clay, China Stone, and Potters' Clay (including Ball Clay).	Fireclay.	Mica Clay.
Annual Average.	(1873–1882	712,928	2,373,648	‡ [‡	‡	6,726¶	Included with "Other Sorts."		
	1883-1892	1,835,174	2,160,129	457,107	‡	‡	3,914			
	1893–1902	2,192,597	1,959,089	557,925	4,051,926	94,370	3,912			
	1903–1912	2,736,700	1,957,897	458,691	4,547,235	66,720	7,925	J		
	1913-1922	2,883,257	1,916,090	217,238	3,257,349	65,738	5,549	809,794 Included wi		
	1923-1932	2,137,320	1,954,164	281,279	5,525,593	139,930	10,670	992,819	2,016,726	26,369
1925		2,464,829	1,916,581	305,763	5,035,350	134,688	11,255	1,114,365	2,229,274	20,834
1926		1,959,795	1,716,467	300,124	4,315,376	119,162	8,260	1,058,249	1,491,648	25,863
1927		2,047,263	1,976,339	298,271	5,765,189	109,697	9,166	1,123,786	2,411,525	31,389
1928		2,038,114	1,931,823	300,251	5,996,041	154,559	8,964	1,037,788	2,261,470	28,395
1929		2,023,609	1,959,362	300,829	6,529,348	138,551	9,344	1,096,790	2,207,651	35,124
1930		2,020,510	2,054,783	260,522	6,712,101	159,836	8,997	981,212	2,028,661	35,537
1931		1,732,746	1,885,252	242,807	6,870,177	174,764	9,797	762,976	1,705,746	23,588
1932		1,368,596	2,204,908	252,854	6,036,431	172,639	12,116	683,682	1,543,860	21,057
1933		1,396,988	2,352,838	272,518	6,483,534	175,643	4,476	776,621	1,683,945	8,151
1934		1,400,775	2,506,062	290,455	7,681,698	161,578	2,274	890,680	2,015,592	8,070
1935	·	1,408,371	2,686,824	302,906	8,254,730	164,250	1,656	940,579	2,283,894	4,622
1936	3	1.409.415	2.817.588	297,098	9.091.358	188,831	2,397	1,026,863	2,524,153	3,494

^{*} Including particulars for Ireland up to 1921. † Prior to 1928 the figures are incomplete. ‡ Cannot be stated. § From of Silica Stone is available from 1922 only, from which year Silica Sand used as Refractory Material is also included. The

Quarries, and certain other Mineral Workings in Great Britain* from 1873.

Quarries Act, 1894, first became operative. Particulars of certain minerals not included below will be found in previous Parts I and III.
e.g., limestone, igneous rocks, sandstone, gravel and sand, are put.

		Other Minerals.									
Gold Ore (Auri- ferous Quartz).	Man- ganese Ore.	Arsenic (White) and Arsenic Soot.	Barytes and Witherite.	†	Fluorspar.	Gypsum (including Anhydrite).	Iron Pyrites.	Ochre, Umber, etc.	F	ecenni eriod o Year.	
#	3,362	5,566	19,303	‡	445	72,213	40,680	5,904	1873	-1882	
3,570	7,162	6,112	24,408	9,604§	267	126,316	22,322	12,324	1883	-1892	age
10,252	1,103	4,093	23,819	14,156	1,386	189,159	11,703	13,383	1893	-1902	Average
11,988	8,661	1,781	37,225	14,067	40,211	245,480	10,134	15,209	1903	-1912	
648	7,172	2,023	55,926	5,571	44,173	239,825	9,841	11,148	1913	-1922	Annual
23	718	1,361	50,449	4,128	36,697	626,365	4,410	9,624	1923	-1932	
-	829	2,545	48,681	1,072	39,079	414,302	5,288	11,224			1925
-	128	1,666	42,775	820	35,883	465,102	4,239	10,203		• •	1926
-	1,509	1,337	46,853	3,090	39,724	506,239	4,890	10,464		• •	1927
160	235	1,293	49,901	7,126	46,862	634,645	4,370	10,504			1928
70		953	57,095	5,329	41,762	966,061	4,371	9,343			1929
		579	58,705	5,141	29,788	838,018	5,497	8,623			1930
		177	45,580	4,052	19,922	754,895	1,979	7,364			1931
††		247	56,639	6,852	15,427	995,422	992	7,748			1932
135		121	66,620	3,862	28,058	985,055	1,132	8,707			1933
501	_	185	73,994	9,440	34,216	961,581	2,145	7,393			1934
791		172	78,132	4,510	31,146	981,913	4,194	8,315			1935
6		153	73,070	5,771	32,962	1,002,472	4,623	7,298			1936

ontinued. Sandstone.									
	Gravel a	nd Sand.		Limes	tone.		stone.		
Other Sorts.	Moulding and Pig- bed Sand.	Other Sorts.	Igneous Rocks.	Calcspar.	Other Sorts.	Silica Stone (including Ganister and Silica Sand) used as Refractory Material.**	Ganister and Silica Sand) used as Refractory		al or
Ţ ‡	1) . [1 ‡	‡	1) . [1 ‡	In-	<u> </u>	1873-1882	
‡	In-	‡	‡	In-	‡	cluded	*	1883-1892	age.
13,395,263		1,612,552	4,497,702	cluded	11,385,286	in next	4,971,975	1893-1902	Average
14,661,052	in next	2,252,378	6,138,013	in next	12,164,414	column.	4,852,542	1903-1912	
8,415,198	column.	2,277,305	5,509,523	column.	10,469,476	320,633	2,020,897	1913-1922	Annual
13,335,258	600,368	5,613,731	8,593,814	14,394	13,263,048	489,181	2,948,790	1923-1932	}
13,073,940	679,559	3,741,961	8,221,983	12,807	13,060,753	494,293	2,888,741		1925
12,918,792	521,031	4,484,251	8,245,729	14,806	11,018,779	337,815	2,984,184		1926
14,609,514	695,216	4,992,714	8,467,806	17,516	14,411,483	568,824	3,131,406		1927
13,278,243	666,224	5,303,973	8,479,996	16,303	14,108,471	510,901	3,158,879		1928
14,271,198	681,810	6,262,248	8,744,388	15,187	14,974,000	549,140	3,051,727		1929
15,356,383	651,694	7,900,151	9,639,803	15,975	14,812,120	444,316	3,240,402		1930
15,623,902	537,638	9,159,467	10,670,929	17,411	13,699,127	387,938	3,321,018		1931
14,876,463	491,065	8,852,709	9,213,697	15,546	12,300,727	372,803	2,896,764		1932
18,385,520	571,975	11,049,927	8,795,233	18,472	13,063,332	447,264	2,949,960		1933
21,920,280	713,659	13,341,564	8,869,472	22,280	14,671,529	532,437	3,266,175		1934
23,251,904	695,291	14,857,093	9,198,036	26,156	15,534,018	576,36 5	3,399 700		1935
24,537,641	802,140	17,988,889	9,930,954	27,681	17,035,470	637,456	3,645,221		1936

1884. || From 1895. ¶ From 1878. ** Ganister is included throughout. Complete information with respect to other kinds latter was previously included with "Gravel and Sand." | †† Less than ½ ton. | †‡ See * note to Table 1 on page 115.

TABLE 6.—Output of Coal in the Principal Districts of Great Britain* from 1873.

Note.—Important disputes affecting the production of coal occurred in the following years and districts, viz.: 1873 and 1875, South Wales; 1879, Durham; 1892, Durham; 1893, Federated Districts; 1894, Scotland; 1898, South Wales; and in 1914 and 1919, Yorkshire. In 1912, 1920, 1921 and 1926, there were national disputes lasting approximately 6 weeks, 2 to 3 weeks, 3 months and 7 months, respectively.

Total Output of Coal.	Tons. 128,680,131 126,590,108 133,306,485	134,125,166 134,179,968 132,612,063 133,720,393 146,969,409	154,184,300 156,499,977 163,737,327 160,757,779 159,351,418	157,518,482 162,119,812 169,935,219 176,916,724 181,614,288	185,479,126 181,786,871 164,325,795 188,277,525 189,661,362	195,361,260 202,129,931 202,054,516 220,094,781 225,181,300
Ireland.	Tons. 135,731 139,213 128,201	125,195 140,181 122,051 129,003 133,702	127,585 127,777 126,114 122,431 109,035	105,563 106,704 91,904 103,201 102,267	105,681 111,881 105,678 112,604 125,586	129,585 135,025 129,965 125,420 124,699
Scotland.	Tons. 16,857,772 16,788,661 18,597,507	18,665,612 18,320,074 17,837,282 17,469,927 18,274,886	20,823,055 20,515,134 21,225,797 21,186,688 21,288,586	20,373,478 21,484,976 22,319,104 23,217,163 24,278,589	25,424,166 27,191,923 25,482,918 21,481,554 28,792,693	28,326,700 29,082,996 30,237,616 31,142,713 33,112,204
Other English Districts.†	Tons. 3,208,192 2,814,884 3,097,518	3,206,438 3,265,926 3,227,690 3,559,785 3,636,523	3,864,243 3,780,160 3,801,317 3,914,933 3,950,758	3,997,085 3,958,333 3,987,570 3,976,805 4,083,081	3,946,436 3,508,736 3,491,024 4,115,764 3,989,176	4,038,335 4,169,088 4,641,464 4,613,215 4,648,445
South Wales and Monmouth.	Tons. 16,180,728 16,490,832 14,173,143	16,972,284 16,911,214 17,417,118 17,819,043 21,165,580	22,234,176 22,817,378 24,975,433 25,552,166 24,342,856	24,204,370 26,046,374 27,355,250 28,064,235 29,415,025	29,992,810 31,207,360 30,154,739 33,418,344 33,040,114	33,867,921 35,806,390 26,723,618 39,870,097 39,328,209
Stafford, Salop, Worcester and Warwick.	Tons. 17,315,242 15,027,747 16,531,180	15,861,052 15,535,899 14,966,315 15,223,401 15,741,186	16,883,989 16,973,241 17,259,970 16,468,895 16,797,221	15,383,090 15,925,046 16,843,976 17,242,266 17,134,480	17,737,619 17,429,953 16,105,631 16,752,428 16,132,957	17,069,778 17,572,099 18,062,391 18,369,475 18,771,905
Derby, Nottingham and Leicester.	Tons. 10,701,020 11,379,522 11,626,749	11,435,300 11,981,007 12,417,269 12,981,483 13,399,609	14,412,248 14,499,583 15,429,234 14,825,534 15,681,960	15,450,035 15,758,767 16,536,209 18,012,378 18,773,860	19,789,172 19,801,137 14,415,578 19,794,139 19,329,651	19,915,703 21,245,398 23,081,794 24,708,292 25,977,987
Lancashire, Cheshire and North Wales.	Tons 19,227,051 18,554,692 20,968,034	20,467,818 20,797,132 20,902,636 21,500,621 22,230,609	21,952,407 22,956,776 23,946,292 23,394,470 23,587,218	23,825,699 24,213,648 24,554,526 25,223,467 25,776,824	26,550,803 25,983,105 18,682,552 27,058,385 25,612,243	26,279,459 26,476,028 28,230,587 28,303,690 28,651,932
Yorkshire.	Tons. 15,311,778 14,827,313 15,860,008	15,137,373 15,813,310 15,589,119 16,248,156 17,473,806	18,294,177 18,530,331 19,567,670 19,224,354 18,501,684	19,392,975 20,108,903 20,579,960 21,976,027 22,338,886	22,794,057 23,189,915 15,955,817 23,446,184 22,811,038	23,943,488 24,055,380 25,639,021 26,907,132 28,250,679
Durham.	Tons. 23,278,556 24,102,300 25,568,349	25,685,183 25,929,652 24,877,656 23,251,903 28,063,346	28,517,843 29,238,814 29,878,435 28,552,303 27,737,324	27,481,005 28,858,121 29,664,892 30,307,177 30,265,241	29,807,523 23,834,027 30,819,070 32,556,924 31,133,253	32,762,539 33,819,068 34,737,347 34,870,675 34,800,719
Northumber- land.	Tons. 6,464,061 6,464,944 6,755,796	6,568,911 5,485,573 5,254,927 5,537,071 6,850,162	7,074,577 7,060,783 7,527,065 7,516,005 7,354,776	7,305,182 5,658,940 8,001,828 8,794,005 9,446,035	9,330,859 9,528,834 9,112,788 9,541,199 8,694,651	9,027,752 9,768,459 10,570,713 11,184,072 11,514,521
Year,	:::	1,172	:::::			:::::
	1873 1874 1875	1876 1877 1878 1879 1880	1881 1882 1883 1884 1885	1886 1887 1888 1889 1890	1891 1892 1893 1894 1895	1896 1897 1898 1899 1900

ம்ல்லைக	ထ်လာကလာထ	00000-	80454	14051	H8H84	10800	9
219,046,945	251,067,628	271,891,899	256,375,366	163,251,181	126,278,521	219,458,951	228,448,356
227,095,042	287,830,962	280,416,338	248,499,240	249,606,864	251,232,336	208,733,140	
230,334,469	261,528,795	287,480,473	227,748,654	276,000,560	237,471,931	207,112,243	
232,428,272	263,774,312	285,664,393	229,779,517	267,118,167	257,906,802,	220,726,298	
236,128,936	264,433,028	253,206,081	229,532,081	243,176,231	243,881,824	222,248,822	
6161616161	ଷ୍ଟ୍ରଷ୍ଟ୍ରଷ୍ଟ	ದಾನನನನ	ର ର ର ର ର ର	700000	<u> </u>	ଷ୍ଟ୍ରଷ୍ଷ	33
103,029 108,737 102,812 105,637 90,335	93,662 99,704 103,158 89,392 79,802	84,564 90,307 82,521 92,400 84,557	89,833 95,646 92,001 92,414 107,961	88,537	++		
32,796,800	37,992,369	41,718,163	36,094,631	22,545,124	16,753,755	29,072,361	31,987,177
34,115,759	40,092,548	39,518,629	34,245,744	35,447,422	34,597,694	28,804,389	
34,992,790	39,158,225	42,456,516	31,890,218	38,494,403	32,358,946	29,243,341	
35,453,389	39,768,365	38,847,362	32,457,864	36,190,281	34,175,864	31,332,648	
35,839,297	41,335,132	35,596,856	31,523,941	33,028,528	31,658,700	31,346,952	
4,562,778	4,757,593	4,894,812	5,511,844	3,201,735	2,592,383	5,197,060	5,496,455
4,670,969	5,096,548	4,776,066	5,416,124	4,816,475	5,338,854	5,275,534	
4,577,193	4,793,022	5,346,239	4,756,295	5,490,512	5,181,983	5,299,380	
4,519,887	4,937,817	5,363,990	4,764,879	5,243,407	5,590,749	5,669,895	
4,497,924	4,861,071	5,440,159	4,938,950	4,818,932	5,615,300	5,815,562	
39,209,260	47,056,365	50,200,727	52,080,765	30,572,003	20,272,572	37,084,852	33,886,179
41,305,583	49,978,211	50,116,264	48,507,965	50,325,094	46,256,363	34,874,302	
42,154,191	50,227,113	56,830,317	46,716,552	54,251,587	43,311,966	34,354,884	
43,730,415	50,363,937	53,879,752	47,522,306	51,085,135	48,149,613	35,173,317	
43,203,071	48,699,982	50,452,600	46,248,967	44,629,522	45,107,912	35,025,110	
17,717,836	18,824,028	20,375,612	19,884,115	12,723,394	12,992,255	16,980,570	20,275,215
18,194,315	20,726,441	19,567,627	19,899,831	17,517,504	18,968,411	17,030,505	
18,014,583	19,808,000	20,845,761	17,653,592	20,334,149	17,088,299	17,016,354	
17,742,900	19,518,855	20,282,681	18,024,935	20,255,280	18,184,439	18,566,855	
18,038,664	20,164,046	19,784,873	17,411,318	18,700,342	17,649,404	19,233,117	
25,118,006	29,303,337	31,655,198	32,591,366	20,929,300	20,845,470	30,557,990	31,028,962
26,252,448	32,633,791	30,461,492	33,169,824	30,772,057	31,471,640	28,556,122	
25,927,483	30,687,591	33,702,521	30,006,156	34,916,672	30,087,529	27,808,247	
26,178,319	30,644,154	31,414,317	29,411,588	34,189,686	32,736,789	29,165,790	
27,287,622	31,257,256	31,783,562	29,422,539	32,755,690	31,990,742	29,237,901	
27,337,333	28,386,795	27,424,075	24,912,623	14,915,323	10,930,507	17,231,743	17,498,409
28,053,551	30,035,357	26,315,682	25,210,173	20,541,375	20,551,646	16,148,982	
28,138,447	27,879,809	28,134,364	22,679,997	23,534,764	18,398,467	16,058,036	
27,444,437	27,297,553	26,206,134	22,652,523	23,235,751	19,115,155	16,544,043	
27,150,778	27,178,124	24,927,009	21,691,351	20,521,439	18,298,368	16,633,026	
26,975,460	32,556,102	39,137,115	40,222,255	28,482,202	21,603,465	40,589,644	42,476,133
27,966,148	35,181,229	38,298,080	40,889,903	42,119,138	45,938,719	38,075,279	
28,532,362	34,936,302	43,680,016	35,666,514	46,466,855	43,367,966	37,252,125	
28,840,506	35,900,046	39,556,450	32,854,307	46,568,688	46,406,074	39,852,601	
29,930,184	38,304,088	40,357,917	36,182,855	45,273,399	44,560,741	40,657,048	
33,954,438	38,813,969	41,718,916	33,742,979	21,768,459	14,136,418	30,248,866	31,372,566
34,808,460	40,264,871	37,890,404	30,842,539	34,862,878	34,603,196	27,802,275	
35,873,268	40,137,585	41,532,890	28,404,190	38,217,832	34,708,793	27,606,127	
36,154,273	41,240,852	37,549,204	31,008,711	36,689,491	39,000,694	30,590,076	
37,397,176	39,431,598	33,737,985	30,818,241	31,493,011	35,862,756	30,272,958	
11,272,005	13,283,408	14,682,717	11,244,955	8,025,104	6,151,696	12,495,865	14,427,260
11,619,072	13,722,262	13,381,787	10,221,491	13,204,921	13,505,813	12,165,752	
12,021,340	13,797,990	14,819,328	9,883,139	14,293,756	12,967,982	12,473,749	
12,258,509	14,013,341	12,472,103	10,989,990	13,660,448	14,547,425	13,831,073	
12,693,885	13,121,929	11,040,563	11,185,958	11,955,368	13,137,901	14,027,148	
:::::	:::::	:::::	:::::	:::::	:::::	: : : : :	:
:::::	:::::	:::::	:::::	:::::	:::::	:::::	:
1902	1906	1911	1916	1921	1926	1931	1936
1902	1907	1912	1917	1922	1927	1932	
1903	1908	1913	1918	1923	1928	1933	
1904	1909	1914	1919	1924	1929	1934	
1905	1910	1915	1920	1924	1930	1935	

* Including particulars for Ireland up to the year 1921.

† Including Cumberland and Westmorland, Gloucester and Somerset in each year, Dorset in 1879, Devon in 1881 and 1893, and Kent in 1907 and subsequent years.

† The output of coal at mines in the Irish Free State, so far as information is available, was as follows:—

	Tons.	1933 105,287	111,074	112,723	124.723
		:	:	:	:
		:	:	:	
		:	:	:	
]		:	:	:	
: swolle		1933	1934	1935	1986
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rish F		1926	1929	1931	1939
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tout c		1926 78.456 1933			
3 00					

In Northern Ireland small quantities of coal were raised in 1922, 1924, 1925 and 1926, but the quantities produced cannot be stated. In 1934, 1935 and 1936, 1,390 tons, 3,630 tons, and 5,256 tons of coal were raised, respectively.

TABLE 7.—Tonnage and Net Selling Value of Coal Raised in each Colliery District of Great Britain during the Year 1936.

District.	Total Quantity of Saleable Coal Raised.	Total Net Selling Value at Mines and Quarries.	Average Net Selling Value per ton.	Total Quantity of Saleable Coal Raised in 1935.	Average Net Selling Value per ton in 1935.
ENGLAND & WALES.	Tons.	£	s. $d.$	Tons.	s. d.
4 37 11 1 1 1	14 400 000	0 000 001	10 0 00	7 4 00 N 7 40	
1. Northumberland	14,427,260	9,068,681		14,027,148	11 5.70
2. Durham 3. Cumberland and Westmor-	31,372,566	20,329,354	12 11.52	30,272,958	12 1.48
land	1,189,948	891,494	14 11 · 80	1,537,432	13 8.55
4. Lancashire and Cheshire	14,659,807	12,209,816		14,146,017	15 5.69
	30,694,734	20,423,731		29,313,996	12 3.82
	11,781,399	8,412,334		11,343,052	13 3.80
7. Nottinghamshire	15,059,284	10,165,006		14,015,308	12 3.60
8. Derbyshire, North	12,471,150	8,734,827		11,978,615	12 8.84
9. Derbyshire, South	806,406	565,213	14 0.22	747,970	12 9.09
10. Staffordshire, North	7,056,616	5,282,619	14 11 67	6,679,719	13 10.65
11. Cannock Chase	5,401,893	4,247,447	15 8.71	5,087,529	14 4.51
12. South Staffs. and Worcester	1,476,715	1,037,835	14 0.67	1,469,111	13 0.61
13. Leicestershire	2,692,122	1,864,219	13 10 · 19	2,496,008	$12 6 \cdot 92$
14. Warwickshire	5,634,019	4,497,733	15 11.60		14 6.41
15. Shropshire	705,972	558,638	15 9.91	674,389	14 5.25
16. Forest of Dean	1,439,036	1;001,191	13 10.98		12 10.88
17. Somersetshire	747,023	652,646	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	709,062	$\begin{array}{cccc} 16 & 1 \cdot 64 \\ 16 & 10 \cdot 37 \end{array}$
10 TT 1	94,844 2,025,604	85,614 1,617,340	15 11.63	$oxed{165,391} \ 2,089,205$	15 3.92
20. South Wales & Monmouth:—	2,023,004	1,017,340	13 11.03	2,000,200	10 0.94
Anthracite	5,581,442	5,808,719	20 9.77	5,874,394	19 11 18
Other	28,304,737	19,792,436		29,150,716	13 6.67
21. North Wales	2,838,602	2,068,113		2,487,009	13 2.54
PR - 4 - 1	100 401 100	100 017 000	14 0 10	100 001 070	12 0 01
Total	196,461,179	139,315,006	14 2.19	190,901,870	13 2.81
SCOTLAND.					
22. Fife, Clackmannan, Kinross					
and Sutherland*	8,742,445	5,514,714	$12 7 \cdot 39$	8,505,287	$11 3 \cdot 36$
23. Lothians (Mid and East) and	4.040.500	0.00=.000	11 11 00	4 040 084	70 7 08
Peebles	4,843,562	2,887,099	11 11.06	4,818,271	10 5.27
24. Lanarkshire, West Lothian (Linlithgow), Stirling,					
Renfrew and Dumbarton:—					
Anthracite	857,627	749,505	17 5.74	820,453	17 5:67
Other	13,115,940	8,674,736		13,003,700	11 9.57
25. Ayrshire, Dumfries and	10,110,010	5,071,730			
Argyll*	4,427,603	2,978,028	13 5.43	4,199,241	11 11.73
Total	31,987,177	20,804,082	13 0.09	31,346,952	11 7.45
Great Britain	228,448,356	160,119,088	14 0.22		
Corresponding figures for 1935	222,248,822	144,538,949	13 0.08	222,248,822	13 0.08
	1		1		

^{*} A small quantity of Anthracite was got in this District.

Note.—The total quantity of Anthracite raised in Great Britain in 1936 was 6,525,225 tons valued at £6,640,477, as compared with 6,798,415 tons valued at £6,664,300 in 1935.

Table 8.—Number of Wet and Dry Cleaning Plants in use and the Quantity of Cleaned Saleable Coal produced in each Colliery District of Great Britain during the Year 1936.

(a) Classification according to Colliery District.

(a) C	Jassij	ication	accor	ding to Co	iliery Dist	rict.		
	Clea	umber ining Pl in use.*		Quan	tity of Cleane	d Saleable	Coal produced	1.
District.	Wash- eries.	Dry Clean- ing.	Froth Flota- tion.	At Washeries.	By Dry Cleaning Plants.	By Froth Flotation Plants.	Total.	Per- centage of Total Output.†
				Tons.	Tons.	Tons.	Tons.	%
England and Wales. 1. Northumberland 2. Durham 3. Cumberland and Westmorland	29 32 9	14 33	1	4,012,898 6,883,198 784,734	1,587,996 7,702,139	8,450 —	5,609,344 14,585,337 784,734	38·9 46·5 65·9
4. Lancashire and Cheshire 5. Yorkshire, South 6. Yorkshire, West	45 72 33	10 18 9	1 -	784,734 5,847,087 16,412,061 5,091,455	370,073 1,653,087 647,227 371,265	19,319 25,660	6,236,479 18,090,808 5,738,682	42·5 58·9 48·7
7. Nottinghamshire 8. Derbyshire, North 9. Derbyshire, South 10. Staffordshire, North	45 35 1 16	13 13 — 3	1 -	5,982,279 3,837,100 7,166 3,066,959	371,265 386,465 — 100,124	10,930	6,364,474 4,223,565 7,166 3,167,083	42·3 33·9 0·9 44·9
11. Cannock Chase 12. South Staffs, and Worcester. 13. Leicestershire 14. Warwickshire	16 5 1 6	5 1 12 8	=	1,099,405 610,347 31,826 605,796	64,297 373 438,167 553,215		1,163,702 610,720 469,993 1,159,011	21·5 41·4 17·5 20·6
15. Shropshire	1 2 1	1 2		8,680 	138,147 48,799	=	8,680 138,147 59,697 33,817	1·2 9·6 8·0 35·7
19. Kent 20. South Wales and Monmouth 21. North Wales	1 104 7	9 —	2	490,948 11,463,070 1,059,879	263,455 690,321 —	91,842	754,403 12,245,233 1,059,879	37·2 36·1 37·3
Total	461	153	7	67,339,603	15,015,150	156,201	82,510,954	42.0
Scotland. 22. Fife, Clackmannan, Kinross and Sutherland	28	_	-	4,761,045 2,486,704			4,761,045 2,486,704	54·5 51·3
24. Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dumbarton 25. Ayrshire, Dumfries and Argyll	90 19	<u></u>	2	6,915,111 1,786,677	1,122	75,496	6,990,607 1,787,799	50·0 40·4
Total	156	1	2	15,949,537	1,122	75,496	16,026,155	50.1
Great Britain	617	154	9	83,289,140	15,016,272	231,697	98,537,109‡	43.1
Corresponding figures for 1935	622	151	5	77,586,707	14,173,519	158,794	91,919,020	41.4
(b) Cl	assific	ation (accord	ing to Situ	ation of Pi	ant.		
1. Plants at Mines treating coal from:—								
(a) Own Mines	3599	152	} }	79,954,448	14,743,538	231,697	94,929,683	Marrie
(b) Other Owners' Mines	5000	102	1	345,282	3,353	v —	348,635	
Total	599	152	9	80,299,730	14,746,891	231,697	95,278,318	
2. Plants at Coke, &c., Works not situated at Mines	18	2		2,989,410	269,381	_	3,258,791	
Grand Total	617	154	9	83,289,140	15,016,272	231,697	98,537,109‡	

^{*} In addition, there were 35 washeries, 10 dry cleaning plants and 1 froth flotation plant which were idle during the year. Altogether, cleaning plants were installed at 592 mines and at 21 works not situated at mines.

† In relation to the output of coal which is generally suitable for cleaning, i.e., fine or small coal, the proportion actually so treated is in general considerably higher than is indicated above by the percentage of the total output of

[†] Including 3,348,152 tons of cleaned anthracite of which 2,733,270 tons were produced at plants in South Wales and 614,882 tons at plants in Scotland.

TABLE 9.—Weekly Tonnage of Coal Raised and Weighed at Pits in the Principal Colliery Districts of Great Britain during the Year 1936* and the Number of Wage-earners on Colliery Books.

	Number of Wage- earners on Colliery Books.‡	756,178 756,680 758,359 759,735 760,217 761,755 762,440 764,408 764,408 764,655 765,202 765,202 765,716 765,716	761,638	763,171 763,171 763,149 761,239 761,013 755,629 755,729 755,729 755,913 755,913 755,913 755,913 755,913 755,913 755,913 755,913 755,913 755,913	757,403
	Great Britain. (Tons).	4.097,800 5.085,700 5.010,400 5.010,400 5.011,700 5.011,700 4.932,500 4.735,600 4.735,600 4.735,800 4.735,800	62,626,400	4,605,700 4,079,600 4,750,200 4,750,200 4,554,700 4,554,700 4,855,400 4,855,400 4,448,700 4,448,700	54,985,500
	Scotland.	320,900 654,900 651,900 661,900 661,900 667,200 667,200 667,200 667,200 667,200 667,30	8,120,900	644,100 643,100 639,100 631,700 637,700 641,500 623,600 625,600 625,600 625,400 624,600 624,600	8,141,400
	Other English Districts. \uparrow $(Toms)$.	MARCH) 110,100 124,200 123,400 122,500 122,500 122,500 123,900 123,900 121,300 121,300	1,578,900	E) 123,000 92,000 182,100 115,900 118,700 118,700 118,500 118,500 115,600 111,600	1,438,800
	South Wales and Monmouth. (Tows).	28th 758,60 778,40 778,40 778,40 771,30 677,10 677,10 677,20 677,20 675,90 675,90	9,354,100	80 27th JUNE) (575,500 (655,500 (655,500 (655,500 (655,500 (655,60	8,174,700
	Stafford, Salop, Worcester and Warwick. (Tows).	WEEKS ENDED 443,100 443,100 457,100 488,700 488,700 489,500 499,500 499,500 417,000 410,600	5,561,000	WEEKS ENDED 114,200 371,300 476,300 476,300 476,300 472,300 889,700 885,500 885,500 885,500 885,500 888,300 888,300 888,300 888,300 888,300 888,300 888,300 888,300	4,793,500
	Derby, Nottingham and Leicester. (Tons).	QUARTER (13 689,500 689,500 689,600 690,800 707,500 696,400 696,200 646,200 646,200 646,200 646,200 646,200 658,600 622,900	8,809,400	QUARTER (13 547,300 557,100 577,100 666,300 666,300 688,700 58	6,743,700
	Lancashire, Cheshire and North Wales. (Tows).	ETRST 315,000 338,200 374,800 374,800 374,600 371,600 381,500	4,839,300	SECOND 2837,6/60 2842,300 386,4/60 3842,800 3842,800 3842,800 3842,800 3842,800 3842,800 3842,100 3842,100 3843,500 3843,100 3843	4,280,000
	Yorkshire.	794,100 991,700 991,500 991,500 947,600 911,500 992,500 991,500 893,700 883,700 884,000 884,200	11,974,900	856,100 733,800 851,200 887,200 887,000 811,200 811,200 811,700 818,700 836,900 836,900	9,814,500
0	Durham.	510,900 6776,700 6775,700 6775,700 6775,800 6772,900 6773,900 663,600 663,600 663,600 663,600	8,524,500	661,300 512,300 659,600 659,600 642,200 648,200 646,200 651,600 651,500 624,300 624,300 628,300	7,867,600
	Northumber-land.	189,200 305,200 305,200 305,500 305,600 312,000 313,500 313,500 318,500 318,500 318,500 318,500 318,500 318,500	3,863,400	313,600 240,500 250,700 304,500 375,200 377,500 313,200 313,200 311,700 229,500 286,500 286,500	3,731,300
	Week ended.	Jan. 44 (a) 1936. Jan. 44 (a) 111 (a) 111 (b) 111 (c) 125 125 127 147 281 281 281 281 281 281 281 281	Total Output and Average Number of Wage-earners on Colliery Books	April 4 11 (6) 18 (6) May 2 (7) 9 (19 (2) 10 (2) 11 (3) 23 (23 (24 (25 (27	Total Output and Average Number of Wage-earners on Colliery Books

	748,660	748,575	748,759	749.952	748,563	748,538	748,639	749,183	749,682	749,008		750 525	751,697	753,075	753,009	753,816	754,874	040,007	757 585	758,531	760,054	761,127		755,998	756,012	758,618
	4,141,900 4,197,400	3,739,200	4,282,500	4.452.700	4,546,200	4,432,800	4,452,800	4,211,400	4,503,500	54,470,200		4 493 600	4.585.800	4.683,000	4,679,100	4,520,700	4,788,800	4,724,300	4,717,700	4.928,300	4,944,800	5,158,500 3,806,000		60,617,200	232,699,300	226,983,600
	623,700	137,600	601,100	643,400	635,500	629,100	632,800	613,100	635,100	7,452,600		640 400	647,200	650,200	652,300	620,000	652,300	0021,200	649,100	659,900	667,300	658,100		8,428,400	32,143,300	31,461,700
26th SEPTEMBER)	110,200	111,400	113,100	111.300	112,400	110,300	106,400	110,200	109,900	1,395,500	Ondwaran	CEMBER)	113.700	116,300	117,300	118,100	118,700	114,600	104,700	107,400	116,700	121,600 74,100		1,441,500	5,854,700	6,232,000
		672,400	673,400	700,700	723,700	717,500	680,700	678,300	696,000	8,434,800	0045	200 700	689,800	726,400	744,200	673,200	762,500	763,000	767,000	776,000	773,000	804,400 509,500		9,445,700	35,409,300	36,698,300
WEEKS ENDED	362,000 368,300	391,600	393,900	375 900	384,400	383,600	379,600	377,400	380,500	4,632,500		*	390,800	395,700	393,400	391,600	405,300	407,400	404,300	420,900	425,200	444,600 309,600		5,167,400	20,154,400	19,231,200
OUARTER (13	71 4	525,800 451,900	488,100	332,700	613,000	583,900	563,000	573,100	585,400 581,800	000,906,9	1	QUARTER (13	601,800	622,000	603,100	565,900	633,200	613,700	615,100	690,900	666,700	728,000 522,100	The state of the s	8,001,800	30,460,900	28,772,300
THIRD OF	00	320,200	318,800	224,400	320,700	328,500	317,500	318,400	330,800 328,200	3,965,000		_	353,000	357,000	359,200	360,700	366,600	364,300	359,900	380,400	374,400	397,200		4,634,500	17,718,800	16,801,000
	748,700	748,100	759,000	555,300	828,400	757,300	843,800	634,200	850,100 853,400	9,885,800		000 200	867,900	845,700	851,200	851,200	882,000	860,600	873,000	915.900	918,000	996,000 665,400		11,114,200	42,789,400	41,070,800
	603,900	605,200	637,400	513,000	624,200	631,600	628,000	610,800	632,500 643,700	8,018,100		000 130	622,200	663,400	656,500	641,400	661,100	670,500	650,200	671,100	688,500	698,100 532,300		8,478,600	32,888,800	31,787,300
	286,600	300,800	297,700		303,900	291,000	301,000	295,900	300,500 288,800	3,779,900		000 000	202,000	306,300	301,900	298,600	304,100	308,400	300,400	305.800	315,000	310,500		3,905,100	15,279,700	14,929,000
		25 (e)		5	22	: :	:	12	26	Total Output and Average Number of Wage-armers on Colliery Books		00 to 0		17		31	Nov. 7	14	:	Dec. 5	12	19 26 (g)	Total Output and Average Number	of Wage-earners on Colliery Books	GRAND TOTAL	Corresponding figures for 1935

* The period covered does not coincide with the calendar year since it includes 30th and 31st December, 1935 (i.e., Monday and Tuesday), and excludes 28th to 31st December, 1936 (i.e., Monday to Thursday).

† Including Cumberland, Westmorland, Gloucester, Somerest and Kent.

† Including a small number of wage-carners employed at coal mines in raising or handling minerals other than coal.

(a) New Year Holidays. (b) Easter Holidays. (c) May-Day Holidays. (d) Whitsum Holidays. (f) August Bank Holiday. (g) Christmas Holidays.

TABLE 10.—Coal Mines Act, 1930: Allocations made by the Central

(NOTE.—See also

	March (Quarter.	June Q	uarter.
District.	Output Allocation.*	Output.†	Output Allocation.*	Output.†
			(a) O v	tput Allocatio
Tanding 1	Tons.	Tons.	Tons.	Tons.
Northumberland	3,905,473 8,682,683	3,869,799 8,558,806	3,787,630 8,268,050	3,725,360 7,851,813
umbouloud.	513,680	360,051	485,256	345,523
ancashire and Cheshire	4,153,500	4,092,884	3,606,748	3,528,360
idland Amalgamated‡	20,918,978	20,684,172	16,942,864	16,579,873
propshire	175,945	175.642	169,294	167,512
orth Staffordshire	1,944,851	1,936,194	1,750,097	1,744,464
outh Staffordshire and Worcestershire annock Chase	412,459	1,936,194 377,796 1,565,694	375,667 1,257,814	340,773 1,247,242
	1,580,480 1,516,188	1,504,337	1,285,867	1,283,806
prest of Dean	379,805	380,074	349,000	346,342
ristol	50.825	34 380	43 866	26,926
merset	214,573 600,326 752,808	212,098 592,576 743,755	182,421 570,755 778,833	177,308
ent	600,326	592,576	570,755	539,429
orth Wales	752,808 10,093,452	9,336,990	9,123,592	716,419
otland	8,275,931	8,057,333	8,232,726	8,168,592 8,057,093
	0,270,331		0,202,720	
GREAT BRITAIN	64,171,957	62,482,581	57,210,480	54,846,835
			(b) Export Su	pply Allocatio
	Export Supply Allocation.*	Export Disposals.†	Export Supply Allocation.*	Export Disposals.†
	- C	T	1 7	
orthumberland	Tons.	Tons. 1,021,745	Tons. 1,205,593	Tons. 1,169,918
rham	1,081,379 2,489,656	2,245,312	2,457,917	2,175,293
mberland	3,000	679	1,773	998
ncashire and Cheshire	3,000 68,230 1,791,208	61,597	1,773 60,120	53,060
dland Amalgamated‡	1,791,208	1,619,728	1,747,460	1,684,895
ropshire	25,974	25,962	32,612	26,584
outh Staffordshire and Worcestershire	25,574	20,002	32,012	20,004
nnock Chase	_		_	
arwickshire		-	· · -	· · · · · · · · · · · · · · · · · · ·
rest of Dean	7,826	6,534	10,630	9,239
istol			195	
	27,874	20,396	25,861	16,349
orth Wales	40,000	22,487	46,031	31.548
uth Wales and Monmouthshire	4,404,016	22,487 3,797,625	4,076,591 2,058,660	3,612,902 1,972,997
otland	1,475,434	1,246,491	2,058,660	1,972,997
GREAT BRITAIN	11,414,847	10,068,556	11,723,443	10,753,783
			(c) Inland Su	pply Allocation
	Inland Supply	Inland	Inland Supply	Inland
	Allocation.*	Disposals.†	Allocation.*	Disposals.†
	Tons.	Tons.	Tons.	Tons.
orthumberland	2,556,484 5,354,431	2,539,802 5,319,691	2,121,917 4,809,809	2,087,499 4,772,877
urham	414,462	295,394	390.885	4,772,877 278,892
ancashire and Cheshire	3,817,388	3,753,608	3,104,491 13,704,339 152,704	2,994,589
dland Amalgamated‡	17.501,405	17,245,713 169,420	13,704,339	13,541,708 151,816
ropshire	170,386 1,708,675	169,420	152,704 1,492,000	151,816 1,486,364
orth Staffordshire	371,251	1,702,548 341,275	329,141	294,800
nnock Chase	1,464,935	1,464,265	1,143,326	1,140,960
arwickshire	1,516,800	1,482,511	1,190,337	1,166,549
prest of Dean	353,807	351,896	311,468 35,594	308,869
ristol	46,642	30,044	35,594	20,044
omerset	198,638 481,512	195,140 481,105	159,995 454,554	152,702 447,504
ent	658,000	629,035	604,687	581,457
		4,127,367	3,619,413	3,474,324
orth Wales	4,212,422			
orth Wales	4,212,422 6,148,083	6,049,647	5,460,264	5,367,520

^{*} Including supplementary allocations granted during the quarter.

§ "Export Supply" means loading at the customary shipping places of the District as cargo into ships for conveyance therein to destinations outside the United Kingdom, the Irish Free State, the Isle of Man and the Channel Islands, or as fuel for use on ships proceeding to such destinations, or as fuel for use on fishing vessels or supply to works situated at ports to be used for the preparation of patent fuel for export.

Council, and Output and Disposals of the Various Districts during the 1936.

bage 24)

Septembe	er Quarter.	Decembe	r Quarter.	
Output Allocation.*	Output.†	Output Allocation.*	Output.†	District.
and Output.				
Tons.	Tons.	Tons.	Tons.	
3,890,881	3,843,744	3.994.623	3,957,584	Northumberland.
8,228,442	8,179,584	8,804,738	8,622,880	Durham.
474,602	342,891	8,804,738 373,280 3,962,020	3,957,584 8,622,880 350,266 3,918,083	Cumberland.
3,409,451 17,661,246	3,843,744 8,179,584 342,891 3,312,683 17,217,397	3,962,020	3,918,083 19,369,949	Lancashire and Cheshire.
168,709	166,298	20,095,761 172,417	171,526	Midland Amalgamated.‡ Shropshire.
1,742,002	1,702,837	1,893,847	1,881,219	North Staffordshire.
357,034	353,105	390,192	380,150	South Staffordshire and
1,160,280	1,141,912 1,349,861	1,413,505 1,426,486	1,353,545 1,429,353	Cannock Chase. [Worcestership
1,354,489 334,055	1,349,861	379,227	1,429,353 379,123	Warwickshire.
41,399	23,438	21,750	20,902	Forest of Dean.
168,230	162,975	200,883	194,638	Somerset.
572,444	548.594	592,852	512,180	Kent.
746,296 9,180,201	729,177 8,587,326 7,481,285	798,852	512,180 786,703 9,597,001 8,436,589	North Wales.
9,180,201	8,587,326	9,920,642	9,597,001	South Wales and Monmouthshire.
7,678,666	7,481,285	8,614,444	8,436,589	Scotland.
57,168,427 55,477,035		63,055,519	61,361,691	GREAT BRITAIN.
and Disposals.§				
Export Supply	Export	Export Supply	Export	
Allocation.*	Disposals.†	Allocation.*	Disposals.†	
Tons.	Tons.	Tons.	Tons.	-
1,271,396	1,238,194	1,182,210	1,123,549	Northumberland.
2,497,996	2,455,049	2,539,630	2,392,163	Durham.
1,002	969	1,119 63,250	601	Cumberland.
70,210	67,281	63,250	63,297	Lancashire and Cheshire.
1,897,663	1,767,913	1,928,542	1,847,537	Midland Amalgamated.‡
29,816	18,865	23,348	17,380	Shropshire.
		20,040		North Staffordshire. South Staffordshire and
	· —		-	Cannock Chase. [Worcestership
				Warwickshire.
14,776	13,135	9,161	7,615	Forest of Dean.
88		119	- 6	Bristol. Somerset.
20,000	19,114	22,959	8,703	Kent.
46,031	31,380	40,000	8,703 32,271	North Wales.
4,360,000	3,953,985	4,732,233	4,464,231	South Wales and Monmouthshire.
2,010,277	1,841,851	1,733,597	1,669,426	Scotland.
12,219,255	11,407,736	12,276,168	11,626,779	GREAT BRITAIN.
nd Disposals.				
Inland Supply	Inland	Inland Supply	Inland	
Allocation.*	Disposals.†	Allocation.*	Disposals.†	
Tons.	Tons.	Tons.	Tons.	
2,119,627	2,084,071 4,873,223	2,580,446	2.509.782	Northumberland.
4,884,110	4,873,223	2,580,446 5,559,918 315,723	5,407,856 278,236 3,614,516	Durham.
389,673	273,544 2,810,967	315,723	278,236	Cumberland.
2,943,111	13 942 139	3,844,944 16,648,958	16,580,928	Lancashire and Cheshire.
14,472,396 157,080	154.350	165,165	163 421	Midland Amalgamated.‡ Shropshire.
1,495,636	13,942,139 154,350 1,453,708 297,085	165,165 1,733,235	1,687,945	North Staffordshire.
303,036	297,085	358,021	1,687,945 346,760 1,317,455 1,391,844	South Staffordshire and
1,094,306	1,039,944	1,404,581	1,317,455	Cannock Chase. [Worcestershire
1,277,544	1,235,381	1,439,114	1,391,844	Warwickshire.
306,101 32,520	304,641 18,502	363,648	339,721	Forest of Dean.
146,403	145,193	197.164	17,817 190,042	Bristol. Somerset.
459,155	449,167	20,000 197,164 513,311	427.314	Kent.
594,710	588,026	666,670	427,314 661,977	North Wales.
3,641,891 5,274,638	3,571,821 5,026,217	4,108,593 6,396,298	4,045,407 6,319,268	South Wales and Monmouthshire. Scotland.
				- Scotland.
39,591,937	38,267,979	46,315,789	45,320,289	GREAT BRITAIN.

[†] As returned by the Executive Boards to the Central Council.

‡ Including Yorkshire, Nottinghamshire, Derbyshire and Leicestershire.

‡ Including Yorkshire, Nottinghamshire, Derbyshire and Leicestershire.

‡ Inland Supply " means supply otherwise than as Export Supply, including supply to other parts of an undertaking of which the coal mine forms part, but excluding supply for use in working the coal mines and supply free or at reduced rates for the use of persons who are or have been employed in or about the mine and the dependants of persons who have been so employed.

Table 11.—Output of Metalliferous Ores, Average Percentage of the Mine, Quarry, or Works, in each of the Principal Producing

Principal Districts of	Output of	Average Percentage of Metal in	the Minera	elling Value of neral at Mine, y, or Works.			
Production.	Mineral.	the Mineral.	Total Amount.	Average Per Ton.			
	Tons.	%	£	£ s. d.			

(a) Iron Ore and Ironstone (clean raw mineral).

West Coast Hematite (Non-phos-phoric):—		1		
Cumberland Lancashire	749,820 130,087	52 56	532,225 98,570	$\begin{array}{cccc}0&14&2\\0&15&2\end{array}$
Total	879,907	53	630,795	0 14 4
T and Tanahara				
Jurassic Ironstones:— (a) Lower Lias Ironstone:— North Lincolnshire (Fro-				
dingham) (b) Middle Lias Ironstone :— Cleveland (North York-	2,962,199	22	374,721	0 2 6
shire) (c) Middle Lias Ironstone:— South Lincolnshire, Leices-	1,848,490	28	595,111	0 6 5
tershire, Northampton- shire and Oxfordshire (d) Inferior Oölite (including some Cretaceous) Iron-	1,679,293	25	200,131	0 2 5
stone:— South Lincolnshire, North- amptonshire and Rut- landshire	4,927,394	32	769,260	0 3 1
Total	11,417,376	28	1,939,223	0 3 5
Coal Measure Ironstones (Blackband and Clay-Ironstone):—				
North Staffordshire South Staffordshire	148,538 7,030	33 30		
Scotland Other Coalfields	16,410 2,187	30		
Total	174,165	32	> 267,998	_
Other Occurrences of Iron Ore (Hematite, Brown Ore, &c.)*	229,938			
Total Iron Ore and Ironstone	12,701,386	30	2,838,016	0 4 6
4 7 4 7 4 4	1.01	1: 1:0	.1 1	

^{*} Devonshire, Forest of Dean and Glamorganshire, chiefly the latter.

Metal in the Mineral, and Net Selling Value of the Mineral at Districts of Great Britain during the Year 1936.

Principal Districts of	Output of	Average Percentage of Metal in	the Miner	ng Value of al at Mine, or Works.		
Production.	Mineral.	the Mineral.	Total Amount.		era r To	
	Tons.	%	£	£	s.	d.
(b) C	opper Precip	oitate.				
Cornwall (from Mines) Devonshire (from Open Works) Anglesey (from Open Works)	77 7 54	30 53 66	1,809	13	3	10
Total	138	45	1,809	13	3	10
(c) (c)	Gold Ore (dres	ssed).				
Merioneth	6		5	0	15	2
(d) I	ead Ore (dre	ssed)		1		
North of England (Cumberland,				1		
Durham, Northumberland, Westmorland and Yorkshire)	3,219	79	36,617	11	7	5
Midlands (Derbyshire)	20,024	77	210,439	10		2
Wales (Caernarvon and Flint) Scotland (Lanark)	15,836	78 73	176,188	11	2	6 2
Total	39,093	78	423,464		16	 8
	1					
(e) Tin O	re, dressed (E	Black Tin).				
Cornwall and Devon: From Mines and Quarries	2,543.28	67	321,070	126	4	10
" Foreshores, the Refuse of Dressing Floors, &c	927 · 71	37	52,253	56	6	6
of Mines	86.90	57	8,989	103	8	10
Total	3,557.89	59	382,312	107	9	1
(f) Tu	ngsten Ore (d	lvessed)	1	;		
Cornwall	188.70	69†	19,657	104	3	5
(g)	Zinc Ore (dr	essed).				
North of England (Cumberland)	81	39	102	1	5	0
Midlands (Derbyshire)	5,319‡		12,536‡		7	2‡
Wales (Flint)	2,469	60	10,230	4	2	10

Table 12.—Number of Persons Employed at Mines, Quarries, &c., in 1920, 1924, 1925,

Note.—Prior to 1925, the particulars for coal mines relate to the number of persons "ordinarily employed." Subbased upon four selected dates. This also applies to metalliferous mines and quarries from 1924 and to that the total number of persons in the lower and upper portions of Section A do not necessarily correspond. For

District.	1913.	1920.	1924.	1925.	1927.	1928.	1929.
			A	-Coal.			
England and Wales. 1. Northumberland 2. Durham 3. Cumberland and Westmorland 4. Lancashire and Cheshire 5. Yorkshire, South	60,627 165,246 10,954 107,656 96,572	62,335 175,170 11,656 116,609 102,407	64,977 174,756 11,957 105,575 122,582	53,545 143,000 10,956 99,330 123,294	50,581 130,725 11,562 90,532 124,296	46,922 130,155 10,461 81,366 119,475	49,496 138,827 9,776 79,233 119,157
6. Yorkshire, West	63,826 40,473 55,412 4,843 30,453	70,202 52,825 60,244 5,634 36,897	72,744 57,360 62,413 5,706 35,550	68,662 57,223 60,109 5,263 35,335	64,442 57,955 56,856 4,942 33,114	56,714 52,114 53,064 4,404 28,834	53,588 52,702 53,021 3,921 28,350
11. Cannock Chase 12. Staffordshire, South, and Worcester-	20,370 10,153	25,107 9,910	26,460 6,977	25,796 6,456	25,052 5,825	23,920 5,151	23,773 4,919
shire	10,327 19,137 3,578	13,131 21,744 4,350	12,556 22,149 3,893	11,843 20,389 3,777	11,536 19,483 3,479	11,343 17,765 3,006	11,305 17,025 2,827
16. Forest of Dean 17. Somersetshire 18. Bristol 19. Kent 20. South Wales and Monmouthshire 21. North Wales	6,741 6,211 2,588 1,134 232,800 15,881	7,818 7,387 2,607 2,402 271,161 19,010	7,682 6,007 1,667 1,743 250,065 19,100	7,331 5,595 1,523 1,873 217,809 17,359	6,628 4,376 1,003 2,795 194,100 15,596	6,038 4,233 985 3,553 168,269 14,758	5,714 4,159 992 4,357 178,315 15,274
Total	964,982	1,078,606	1,071,919	976,468	914,878	842,530	856,731
Scotland. Fife, Clackmannan, Kinross and Sutherland. 23. Lothians (Mid and East) and Peebles 24. Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dum-	30,776 13,944 79,128	32,007 15,678 82,690	31,722 15,925 77,845	28,597 15,222 66,986	23,634 13,534 57,651	22,374 12,581 48,891	23,650 13,501 49,998
barton. 25. Ayrshire, Dumfries and Argyll	15,576	16,948	16,313	15,169	14,189	12,612	12,794
Total	139,424	147,323	141,805	125,974	109,008	96,458	99,943
Great Britain. (i) Wage-earners	}1,104,406	1,225,929 {	1,191,984 21,740	1,083,637 18,805	1,005,006 18,880	921,260 17,728	939,367 17,307
Wage-Earners and Salaried Persons (including Clerks). Under 16 years of age	73,069 }1,031,337 1,104,406	76,408 1,149,521 1,225,929	65,317 1,148,407 1,213,724	51,179 68,506 62,913 910,417 1,093,015	42,048 56,660 58,575 840,863 998,146	38,729 52,160 57,042 775,805 923,736	42,436 54,498 57,121 815,746 969,801
			B.—Othe	er Minerals			
Iron Ore and Ironstone	126,942	22,783 } 84,717{	15,167 4,314 96,978	12,819 4,508 100,666	11,864 5,137 97,399	11,928 5,024 94,676	12,884 4,904 95,040
(a) Mines (b) Quarries and Other Workings*	49,641 77,301	42,208 65,292	32,528 83,931	31,078 86,915	29,503 84,897	28,346 83,282	28,802 84,026
(i) Wage-earners	} 126,942	107,500 {	112,663 3,796	114,057 3,936	110,562 3,838	107,781 3,847	108,920 3,908
Total	126,942	107,500	116,459	117,993	114,400	111,628	112,828

^{*} Other workings include brine salt wells and certain other shallow quarries. Particulars in respect of persons

Great Britain, classified according to the Mineral got, in the Years 1913, and from 1927.

sequently, the numbers in the main portion of Section A represent the average number of persons on Colliery Books other quarries from 1930 (Section B). Particulars of the ages of coal miners relate to the end of the year only, so further details, see Tables 15 and 17.

1930.	1931.	1932.	1933.	1934.	1935,	1936.	District.			
			A.—Coal.							
47,465	43,672	42,425	41,787	43,402	44,199	44,927	England and Wales. 1. Northumberland. 2. Durham. 3. Cumberland and Westmorland. 4. Lancashire and Cheshire. 5. Yorkshire, South.			
133,282	115,164	105,964	102,911	107,873	107,089	108,668				
9,701	8,616	7,044	6,416	6,873	6,356	4,881				
75,746	72,492	67,819	65,372	62,327	60,703	60,059				
119,268	113,246	106,077	99,741	99,015	97,012	97,566				
52,341	51,057	49,353	44,765	44,245	43,298	42,823	6. Yorkshire, West. 7. Nottinghamshire. 8. Derbyshire, North. 9. Derbyshire, South. 10. Staffordshire, North.			
52,393	51,307	49,499	46,969	46,852	45,923	45,538				
52,722	50,513	48,333	44,591	43,860	42,723	41,656				
3,734	3,761	3,684	3,521	3,372	3,203	3,265				
26,396	23,762	22,803	22,901	23,144	22,843	23,228				
23,159	23,052	23,297	22,998	22,809	22,207	21,565	11. Cannock Chase.			
4,725	4,610	4,645	4,513	4,572	4,552	4,544	12. Staffordshire, South, and Worcester-			
11,079	10,935	10,812	10,312	9,773	9,272	9,205	shire. 13. Leicestershire. 14. Warwickshire. 15. Shropshire.			
17,459	17,601	17,473	17,308	17,136	16,813	17,192				
2,714	2,668	2,750	2,647	2,656	2,621	2,736				
5,373	5,139	5,133	5,178	5,263	5,122	5,299	16. Forest of Dean. 17. Somersetshire. 18. Bristol. 19. Kent. 20. South Wales and Monmouthshire. 21. North Wales.			
3,842	3,700	3,724	3,659	3,577	3,441	3,451				
988	896	965	882	923	864	484				
5,063	5,678	6,382	6,625	7,088	7,337	7,385				
172,870	158,162	145,709	142,900	139,806	131,697	126,233				
14,407	13,787	13,075	11,494	10,582	8,741	9,756				
834,727	779,818	736,966	707,490	705,148	686,016	680,461	Total.			
23,124	20,768	19,928	19,911	20,908	21,725	22,546	Scotland. 22. Fife, Clackmannan, Kinross and Sutherland.			
13,477	12,679	12,483	12,447	12,390	12,305	12,470	23. Lothians (Mid and East) and Peebles. 24. Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dumbarton.			
48,080	42,825	38,585	37,856	38,712	38,167	39,995				
11,968	11,774	11,362	11,387	11,052	11,261	11,619	25. Ayrshire, Dumfries and Argyll.			
96,649	88,046	82,358	81,601	83,062	83,458	86,630	Total.			
914,328	851,623	803,615	773,640	772,831	754,300	751,720	Great Britain. (i) Wage-earners. (ii) Salaried Persons (including Clerks).			
17,048	16,241	15,709	15,451	15,379	15,174	15,371				
36,803	30,998	26,098	24,972	29,055	31,041	28,945	Wage-Earners and Salaried Persons (including Clerks). Under 16 years of age. 16 and under 18 years of age. 18 ,, ,, 20 ,, ,, ,, 20 years of age and over. Total.			
53,844	51,922	45,196	40,099	36,726	37,197	41,831				
52,952	52,143	50,728	50,730	46,424	40,326	37,255				
764,256	724,760	678,466	678,143	672,568	658,937	663,162				
907,855	859,823	800,488	793,944	784,773	767,501	771,193				
		В	.—Other Mi	nerals.						
11,388	7,742	7,017	6,675	7,981	7,981	8,846	Iron Ore and Ironstone.			
3,464	1,380	1,565	2,021	3,270	3,409	3,495	Non-ferrous Metalliferous Ores.			
90,522	85,866	78,805	78,039	82,245	84,100	86,980	Other Minerals.			
25,526	19,095	17,427	18,022	21,276	21,836	22,917	(a) Mines. (b) Quarries and Other Workings.*			
79,848	75,893	69,960	68,713	72,220	73,654	76,404				
101,225	90,931	83,463	82,797	89,326	91,155	94,832	(i) Wage-earners.			
4,149	4,057	3,924	3,938	4,170	4,335	4,489	(ii) Salaried Persons (incl. Clerks).			
105,374	94,988	87,387	86,735	93,496	95,490	99,321	Total.			

employed at such workings are not available for 1913 and 1920. In 1924 they numbered about 4,500.

Table 13.—Number and Sex of Persons Employed Below and Above ground at Mines under (a) the Coal Mines Act, and (b) the Metalliferous Mines Regulation Acts, in Great Britain* from 1873.

Note.—For the number and cause of fatal accidents at mines at which these persons were employed see Table 47. Comparative particulars of the output of mineral are shown in Table 4.

			Coal Mi	ines Act.		Met	alliferous	Mines A	icts.	
Decennial Period or		Below ground.	Above g	round.		Below ground.	Above a	ground.		Total under both
Year.		Males.	Males.	Fe- males.	Total.	Males.	Males.	Fe- males.	Total.	Acts.
Te sign 1873–1882 1883–1892 1893–1902 1903–1912 1913–1922 1923–1932	•••	403,281 461,024 588,446 772,234 869,927 812,298	94,687 106,268 139,166 179,724 213,217 204,627	5,460 4,427 4,779 5,890 8,247 4,767	503,428 571,719 732,391 957,848 1,091,391 1,021,692	33,256 25,408 19,778 17,400 11,765 8,147	18,952 15,548 13,267 11,831 8,026 6,036	3,180 1,525 624 212 195 68	55,388 42,481 33,669 29,443 19,986 14,251	558,816 614,200 766,060 987,291 1,111,377 1,035,943
1913		909,834 945,806 990,359 918,066 933,029 979,785	211,483 236,131 249,547 220,103 223,748 234,423	6,573 9,376 8,318 6,142 5,977 6,223	1,127,890 1,191,313 1,248,224 1,144,311 1,162,754 1,220,431	16,525 12,327 12,291 6,563 7,071 9,107	9,063 8,818 5,968 5,383 6,564	271 214 96 72 83	27,412 21,661 21,323 12,627 12,526 15,754	1,155,302 1,212,974 1,269,547 1,156,938 1,175,280 1,236,185
1924	::	979,108 890,849 899,778 753,208 824,866	244,785 221,212 222,744 197,618 207,751	6,355 5,767 5,687 4,230 4,774	1,230,248 1,117,828 1,128,209 955,056 1,037,391	9,223 8,967 }8,866 9,057	6,590 6,550 6,618 6,746	74 76 76 81	15,887 15,593 15,560 15,884	1,246,135 1,133,421 {1,143,769 970,616 1,053,275
1928		755,044 772,774 748,657 693,386 652,018 625,260	192,355 192,901 190,777 180,000 171,889 168,544	4,233 4,061 4,008 3,755 3,532 3,490	951,632 969,736 943,442 877,141 827,439 797,294	8,866 9,065 7,704 5,413 5,199 5,491	6,707 6,544 5,661 4,316 4,069 4,280	78 77 52 44 37 36	15,651 15,686 13,417 9,773 9,305 9,807	967,283 985,422 956,859 886,914 836,744 807,101
1934		624,437 608,316 605,720	169,894 167,995 169,143	3,368 3,191 3,011	797,699 779,502 777,874	6,566 6,815 7,034	5,158 4,928 5,041	52 50 44	11,776 11,793 12,119	809,475 791,295 789,993

^{*} Including particulars for Ireland up to the year 1921.

TABLE 14.—Number of Persons employed at Mines and Quarries, classified according to Age and Sex, including persons employed at all Mines under the Coal and Metalliferous Mines Regulation Acts and at Quarries under the Quarries Act, and the Number of Mines and Quarries at work in Great Britain in the Year 1936.

		ACT UNDER WHICH THE SAFETY REGULATIONS ARE ADMINISTERED.*							
Persons Employed.		Coal Mines	Metalli- ferous Mines Acts.	Quarries Act.	Total in 1936.	Total in 1935.			
WAGE EARNERS (at 12th December).									
Below ground or Inside Quarries.									
Males :		17,207 30,301 28,641 532,767	16 100 230 6,766	436 906 1,244 44,894	17,659 31,307 30,115 584,427	19,768 28,036 32,648 579,191			
		608,916	7,112			659,643			
Total at 12th December	•••	598,896 601,761 613,308	7,009 6,917 7,099	47,480 47,841 48,765 46,565	663,508 653,746 657,443 666,972	652,716 660,474 671,053			
Average Numbers Employed Below Ground Inside Quarries	l or	605,720	7,034	47,663	660,417†	660,971			
Above ground or Outside Quarries.									
Males:— Under 16 years of age	• • •	11,399 10,958 8,093 124,972	160 223 242 4,043	622 1,058 1,115 19,858	12,181 12,239 9,450 148,873	12,122 10,502 9,839 146,475			
Under 16 years of age	•••	226 410 327 1,309	=	_ _ 1 15	226 410 329 1,335	279 386 386 1,422			
Total at 12th December	••	157,694 155,734 155,657 156,989	4,680 4,639 4,605 4,495	22,669 22,393 22,509 21,656	185,043 182,766 182,771 183,140	181,411 180,564 181,724 183,433			
Average Numbers Employed Above Ground Outside Quarries	or	156,519	4,604	22,307	183,430	181,784			
Total Average Number of Wage Earners		762,239	11,638	69,970	843,847	842,755			
CLERKS AND SALARIED PERSONS									
Males		14,891 757	456 33	3,216 388	18,563 1,178	18,249 1,110			
Total at 12th December		15,648 15,609 15,632 15,652	489 481 476 475	3,604 3,567 3,554 3,515	19,741 19,657 19,662 19,642	19,359 19,339 19,292 19,309			
Average Number of Clerks and Salaried Person	ns	15,635	481	3,560	19,676	19,325			
GRAND TOTAL—WAGE EARNERS AI SALARIED PERSONS (including Clerks (at 12th December).	ND s)								
Under 16 years of age	•••	29,198 42,277 37,666 673,117	179 332 478 11,292	1,145 2,089 2,501 68,018	30,522 44,698 40,645 752,427	32,577 39,458 43,611 744,767			
Total at 12th December	••	782,258 770,239 773,050 785,949	12,281 12,129 11,998 12,069	73,753 73,801 74,828 71,736	868,292 856,169 859,876 869,754	860,413 852,619 861,490 873,795			
Average Numbers Employed in 1936		777,874	12,119	73,530	863,523	_			
Average Numbers Employed in 1935		779,502	11,793	70,785	_	862,080			
Number of Mines and Quarries at work in 193	36	2,080	262	5,080	7,422	7,418			

^{*} In addition, 2,889 persons in 1936, and 2,884 persons in 1935, were employed at brine salt wells and other mineral workings to which the Regulation Acts do not apply.

† Including adult females employed inside quarries, viz., 1 in 1936, and 4 in 1935.

Note.—For particulars of the numbers employed classified according to the mineral got see Tables 15 and 17.

TABLE 15.—Number of Persons Employed in and about Coal Mines (including Tramways and in Cleaning Coal) classified according to Age and Sex in each

Tramways and in Cleaning	Coai	ciuss	sijiei	i acc	orains	, 10 F.	ige a	na S	ex in	each
					/	V			EN	GLAND
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Persons Employed.	Northumberland.	Durham,	Cumberland and Westmorland.	Lancashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.
WAGE EARNERS (at 12th December).	1		1		1		1	1		1
Males:— Below ground.										
Under 16 years of age	1,126 1,702 1,350 29,992	5,268 4,209	214 268	1,815 1,670	4,269 3,458	1,356	1,394 1,502	1,243	91	798 677
Total at 12th December	34,170 33,886 34,014 33,958	84,755 84,901	3,688	43,836 44,141	76,376 76,893	32,213	35,096 35,187	31,331	2,426	17,087 17,048
Average Numbers Employed Below Ground	34,007	85,850	3,711	44,366		32,694	35,077	32,154	2,448	17,086
Above ground. Males:—										
Under 16 years of age	824 883 543 7,889	1,222	126		942	539 398	532	661	- 24	316 358 296 4,631
Females:— Under 16 years of age 16 and under 18 years of age 18 ,	1 	- 1 - 58	- 8 11 68	121 219 202 780	_ _ _ _ 18	=	- - 8			_ _ _ 9
Total at 12th December	10,169 10,122 10,128 10,123	21,365 20,862 20,808 21,171	1,106 1,088 1,062 1,046	14,193 14,287	18,477 18,246 18,248 18,238	9,064 8,950 8,969 9,090	9,353 9,380 9,363 9,426		685 677 700 705	5,610 5,596 5,563 5,528
Average Numbers Employed Above Ground	10,136	21,051	1,076	14,344	18,302	9,018	9,381	8,665	692	5,574
Total Average Number of Wage Earners	44,143	106,901	4,787	58,710	95,295	41,712	44,458	40,819	3,140	22,660
CLERKS AND SALARIED PERSONS (at 12th December).								14		
Males	729 59	1,702 79	86 9	1,279 53	2,239 54	1,083 32	-1,023 46	815 22	122 2	534 37
Total at 12th December , 12th September , 13th June , 14th March	788 789 781 779	1,781 1,768 1,768 1,751	95 94 94 94	1;332 1,340 1,351 1,372	2,293 -2,268 -2,258 -2,266	1,115 1,112 1,105 1,111	1,069 1,076 1,087 1,088	837 835 838 837	124 124 125 125	571 567 566 568
Average Number of Clerks and Salaried Persons	784	1,767	94	1,349	2,271	1,111	1,080	837	125	568
GRAND TOTAL.—WAGE EARNERS AND SALARIED PERSONS (including Clerks) (at 12th December).					,					
Under 16 years of age	1,963 2,613 1,920 38,631	5,418 7,284 5,490 91,946	206 352 344 4,058	1,695 2,787 2,463 53,480	4,468 -5,693 4,489 83,480	1,342 1,925 1,674 37,822	1,303 1,975 2,043 39,611	1,391 1,931 1,923 36,093	75 82 123 2,942	732 1,188 996 20,351
Total at 12th December	45,127 44,797 44,923 44,860	107,385 107,477	4,960 4,870 4,890 4,804	60,425 59,369 59,779 60,662	98,130 96,890 97,399 97,847	42,763 42,275 42,572 43,682	44,932 45,552 45,637 46,029	41,338 40,738 41,655 42,893	3,222 3,227 3,290 3,319	23,267 23,250 23,177 23,218
Average Numbers Employed in 1936	44,927	108,668	4,881	60,059	97,566	42,823	45,538	41,656	3,265	23,228
Average Numbers Employed in 1935	44,199	107,089	6,356	60,703	97,012	43,298	45,923	42,723	3,203	22,843

Note.—The Table above includes particulars of all persons who were employed in raising or handling coal, or in connexion other minerals when got with coal, e.g., ironstone, fireclay, &c.

those employed on Sidings at the Pits and on Private Branch Railways and Colliery District of Great Britain in the Year 1936.

AND W	ALES.											SCOTI	AND.	2	GREAT BI	RITAIN.
11.	12.	13.	14.	15	16.	17.	18.	19	20.	21.	22.	23.	24.	25.		
Cannock Chase.	Staffordshire, South, and Worcestershire.	Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Somersetshire.	Bristol.	Kent.	South Wales and Monmouthshire,	North Wales,	Fife, Clackmannap, Kinross and Suther land.	Lothians (Mid and East) and Peebles.	Lanarkshire, West Lothian, Stirling, Ren- frew and Dumbarton.	Ayrshire, Dumfries and Argyll.	Total in 1936.	Total in 1935.
300 438 489 14,384	24 44 62 3,326	25 74 135 6,703	119 236 321 11,988	47 95 76 1,908	65 152 206 4,022	38 77 100 2,530	2 14 7 262	177 259 227 5,573	4,235 7,048 6,597 87,068	186 317 334 6,779	334 823 917 15,489	132 442 534 8,272	411 1,332 1,786 28,116	201 514 626 7,723	17,044 29,973 28,319 524,838	19,187 27,031 30,964 521,918
15,611 16,025 16,304 16,550	3,456 3,287 3,298 3,323	6,937 6,910 6,945 7,056	12,664 12,500 12,429 12,365	2,126 2,152 2,163 2,141	4,445 4,399 4,440 4,386	2,745 2,758 2,792 2,801	294	6,236 6,265 6,216 6,268	104,948 101,637 102,773 108,424	7,616 7,543 7,497 7,359	17,563 17,159 16,890 16,959	9,380 9,296 9,192 9,249	31,645 30,629 30,149 30,548	9,064 8,774 8,645 8,835	600,174 590,322 593,259 605,030	599,100 591,662 598,667 611,915
16,122	3,341	6,962	12,490	2,146	4,418	2,774	368	6,246	104,445	7,504	17,143	9,279	30,743	8,830	597,197	600,336
250 232 187 4,163	31 21 45 965	54 65 92 1,799	210 195 169 3,777	24 24 24 440	25 57 44 695	16 18 22 536	4 2 1 68	74 87 88 763	876 1,010 800 17,220	118 184 127 1,632	476 486 321 3,322	329 254 205 2,196	1,053 869 739 5,934	295 230 163 1,980	11,315 10,844 8,010 123,211	11,238 9,358 8,398 121,805
	<u>-</u>	_ _ _ 3	_ _ _ 8	=	_ _ _ 2		=		$-\frac{1}{29}$		67 99 55 106	15 12 5 20	22 70 53 123		226 410 326 1,302	279 385 383 1,399
4,840 4,945 4,947 5,001	1,066 1,059 1,096 1,122	2,013 2,022 2,033 2,034	4,359 4,255 4,270 4,286	513 526 514 516	823 820 812 798	594 584 585 586	75 91 108 134	1,012 1,017 1,008 1,005	19,936 19,550 19,613 20,045	2,067 2,056 2,022 1,994	4,932 4,855 4,844 4,818	3,036 2,972 2,958 2,930	8,863 8,691 8,589 8,564	2,671 2,613 2,563 2,488	155,644 153,742 153,670 155,037	153,245 152,598 153,761 156,251
4,933	1,086	2,025	4,292	517	813	587	102		19,786	2,035	4,862	2,974	8,677	2,584	154,523	153,964
21,055	4,427	8,987	16,782	2,663	5,231	3,361	470	7,257	124,231	9,539	22,005	12,253	39,420	11,414	751,720	754,300
459 42		207 12	385 31	67		89 2	8	128 2	1,928	214			535	193 14	14,626 749	14,435 721
501 517 512 509	108 126	217	411	72 73	65 68 70 70	91 90 90 91	8 12 16 18	127 128	1,992 2,005	217 218 218 218	541	217	576	207 204 204 207	15,375 15,344 15,374 15,392	15,156 15,151 15,151 15,238
510	117	218	410	73	68	90	14	128	2,002	217	541	217	575	205	15,371	15,174
	-		. :			4					1					
568 698 698 18,990	3 70 3 110	147	440	121 100 3 2,415	211 255 4,776	96	16	356	8,106 4 7,441	512	2 1,448 3 1,324	726 1 757	2,304 7 2,615	803	41,831 37,255	31,041 37,197 40,326 658,937
20,952 21,487 21,763 22,060	7 4,454 3 4,520	9,151	1 17,166 17,103	2,710 2,750 7 2,750 7 2,732	5,333 5,287 5,322 5,324 5,254	$\begin{vmatrix} 3,432 \\ 2,467 \end{vmatrix}$	397	7,409	126,883 123,179 124,391 130,479	9,81	7 22,559 7 22,27	9 12,483	39,893 7 39,314	11,591	759,408	767,501 759,411 767,579 783,404
21,56	_		-	-			-		-	-			-			
22,20	4,552	9,272	16,81	3 2,62.	5,122	3,441	86:	7,33	7 131,69	8,74	1 21,72	5 12,30	5 38,167	11,26	1 1	769,474

therewith, at mines and quarries. In all cases allowance has been made for persons who were employed in raising or handling

TABLE 16.—Average Weekly and Aggregate Number of Days on which Coal was wound, and on which the Pits were idle, in each District in Great Britain during the Year 1936.*

Aggregate Number of Days on which	Aggregate Number of Days on which the Pits wound Coal or were idle.			276.75.273.51 285.92.277.19 285.03.278.87 248.11.242.57 224.14.274.96 227.47.99 221.86.206.62 201.35.10.2.77 197.99.20.37 201.51.196.40 235.28 235.28 236.14.249.30 235.28 239.06.297.53 259.06.297.53
Average Weekly Number of Days	Average Weekly Number of Days on which the Pits wound Coal or were idle.			4. 25 - 25 - 25 - 25 - 25 - 25 - 25 - 25
	26th Dec.		-:	0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
oal	28th Nov.		nd Cos	7. 2. 2. 4. 4. 4. 4. 6. 4. 4. 4. 6. 4. 4. 6. 4. 4. 6. 4. 4. 6. 4. 4. 6. 4. 6. 4. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.
und C	Average Weekly Number of Days on which the Pits wound Coal or were idle during the four Weeks† ended set. 29th 28th 2nd 30th 27th 1st 29th 26th 31st 28t eb. Feb. May. May. June. Aug. Aug. Aug. Sept. Oct. No		Moni	55.5.5.4 5.5.5.5.4 5.5.5.5.4 5.5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.5.6 5.5.6 5.5.6 5.6.
its woo			e Pits	5. 47 5. 5. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.
the P ks† en			(a) Number of Days on which the Pits wound Coal	2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
which r Wee			on wh	5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.
ys on he fou			Days	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2
of Da	30th 2 May. J1		er of	74.1.2.4.4.4.6.6.6.4.4.4.4.6.6.6.4.4.4.4.4.6.6.6.6.4.4.4.4.4.6.6.6.6.4
ımber idle du	2nd 36 May. M	·	Numb	74.7.7.4.6.6.6.7.7.7.7.9.9.9.9.9.9.9.9.9.9.9.9.9
kly Ni were	28th 21 Mar. M		(g)	0.0.0.0.4.4.4.4.0.0.4.4.0.0.0.0.0.0.0.0
or or	29th 28 Feb. M.			0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
verage				
	1st Feb.			
				ershir
	DISTRICT.		ENGLAND AND WALES.	1. Northumberland 2. Durham 3. Cumberland and Westmorland 5. Yorkshire and Cheshire 6. Yorkshire, West 7. Nortinghamshire 8. Derbyshire, North 9. Derbyshire, South 10. Staffordshire, South 11. Cannock Chase 12. Staffordshire, South, & Worcestershire 14. Warwickshire 15. Shropshire 16. Forest of Dean

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272.88 254.51 294.40 280.65 273.13 275.22 266.32 270.02 285.37 285.68	248	284.75 281.57 285.71 278.73	289 · 13 288 · 82 293 · 56 289 · 32	288 · 08 285 · 53	5.00 4.86 4.74 252.86 246.32		10.00 1.27 33.78 1.18 1.71	300	0 318
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5.58 5.26 4.89 5.50 5.66 5.40 6.45 5.25 5.29 5.22 5.12 5.19 5.22 5.49 5.49	4.89	5.71	5.88	5.83	00	were	0.38 0.19 0.21 0.05 0.03 0.04 0.28 0.65 0.75 0.02 0.02 0.02 0.06 0.03 0.03	5.79	, an
m w 4 m m							00000	1	day)
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5.33 6.00 5.49 5.37 5.64	4.88	5.57	5.79	5.72	4.97	ch	0.01 0.01 0.03 0.03	5.78	lay a
						which		5	fond
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4.44 5.20 4.80 5.29	4.39	5.59	5.80	5.73	4.54	Days	0.01 0.01 0.02 0.02 0.03	5.78	, 19
						of		1	nber
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						Number			lst I
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5.78 5.78 5.56 5.63	4.95	5.69	5.73	5.73	5.04		0.00	5.79	lce i
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5.79 5.77 5.01 5.77	23	5.75	5.87	5.84	5.29		0.02 0.02 0.02 0.05	5.79	193
							1	1	year
5.95	5.33	5.27	5.26	5.26	5.33		0.16 0.03 0.02 0.02 0.05	5.79	dar
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rth		Kinross) and P hian (L	ra.		Z		Chi	26 L	oinci
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shi:	lan	S lack lan (M	Stir	pu	GREAT BRI		kliy threes s Tr ts to	o I	d co
rset ol . W	England and Wales	C. C. her ans	gow), Stirling, Renfrew and Dum barton rshire, Dumfries and Argyll	Scotland	9		Wee ost lay utes t of t of len len r C	mbe	perio
Somersetshire Bristol Kent South Wales and		SCOTLAND. Fife, Clackmannan, Kinross and Sutherland Lothians (Mid and East) and Peebles Lanarkshire, West Lothian (Linlith-	gov bar vrsl	Sce			age Weekly Number ays lost through:— Holidays Disputes Want of Trade Accidents to Men and Other Causest	Nun	* The period covered does not coincide with the calendar year 1936, since it includes 30th and 31st December, 1935 (i.c., Monday and Tuesday), and excludes 28th to 31st December,
17. Somersetshire	4	SCOTLAND. 22. Fife, Clackmannan, Kinross and Sutherland 23. Lothians (Mid and East) and Peebles 24. Lanarkshire, West Lothian (Linlith-	gow), Stirling, Renfrew and barton 25. Ayrshire, Dumfries and Argyll				Average Weekly Number Days lost through:— Holidays Disputes Want of Trade Accidents to Men and Other Causes‡	Total Number of Coal-win	F *
17. 19. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20	1	22. 24.	25.			1	Av	To	1

1936 (i.e., Monday to Thursday).

§ The time accounted for represents the total possible coal-winding time amounting on the average to 5% days per week throughout the year. The remaining % day is accounted for by the ordinary good represents the total possible coal-winding time amounting on the average to 5% days per week throughout the year. The remaining % day is accounted for by the ordinary good or idle days, including the Saturday afternoon shift. It is not necessarily implied that all the persons employed worked every day coal was wound.

TABLE 17.—Number of Persons Employed at Mines, Quarries, &c. (except those producing Coal) in Great Britain during the Year 1936, classified according to Age and Sex and the Kind of Mineral got.

Note.—Persons employed at Quarries which are less than 20 feet deep are not included except at those producing metalliferous ores (chiefly Jurassic ironstone other than in Cleveland) and certain other minerals of special importance, which are included under "Other Minerals," e.g., Fluorspar, Barytes, Celestine and Bog Ore, etc. (see also footnote (*) on page 139).

11

				Total in 1935.		581 1,005 1,684 57,273	60,543 61,054 61,807 59,138	\$60,636	937 1,194 1,511 27,117	30,847 30,633 30,689 29,910	30,519	91,155
				.9861 ni IstoT		615 1,334 1,796 59,589	63,334 63,424 64,184 61,942	163,221	913 1,459 1,493 28,147	\$32,109 31,703 31,816 30,817	31,611	94,832
				Total.		515 1,112 1,474 51,453	54,554 54,805 55,638 53,419	54,604	794 1,255 1,327 25,305	28,764 28,432 28,577 27,662	28,358	82,962
				Other Minerals,		27 34 1,499	1,565 1,579 1,504 1,504	1,549	64 80 67 2,734 60	3,005 2,987 3,031 3,006	3,008	4,557
				Slate,		8 27 76 4,128	4,239 4,186 4,133 4,089	4,162	231 412 343 4,545	5,531 5,558 5,513 5,402	5,501	9,663
				.Sandstone,		52 104 117 4,356	4,629 4,773 4,862 4,428	4,673	126 143 162 3,268	3,702 3,699 3,610 3,430	3,610	8,283
Ш.				Oil Shale.		36 54 66 1,261	1,417 1,413 1,460 1,407	1,424	111 144 320	357 362 376 366	365	1,789
linerals				Limestone.		100 175 251 10,735	11,261 11,131 11,504 10,967	11,216	96 168 244 4,423 5	4,936 4,819 4,832 4,845	4,858	16,074
All Other Minerals.				Igneous Rocks.		78 161 193 8,319	8,751 9,455 9,647 8,382	9,059	91 181 203 4,509	4,985 4,904 5,087 4,684	4,915	13,974
All			.1	Gravel and Sand		64 152 206 5,281	5,703 5,903 6,113 5,888	5,902	43 74 90 1,445	1,654 1,667 1,726 1,602	1,662	7,564
	12	anibula	oni) enotë 1 (bns2 so	Fireclay, Mouldi Sand, and Silica Ganister and Silic Refractory Mate		61 151 170 170 4,466	4,848 4,753 4,725 4,596	4,731	45 59 69 1,119	1,299 1,236 1,190 1,188	1,228	5,959
				Clay, Shale, etc.		47 156 256 7,659	8,118 7,764 7,730 8,033	7,911	24 65 77 1,134	1,304 1,249 1,267 1,267	1,265	9,176
		Mica nclud-	s, Clay (i	China Clay, Chin Clay and Potters ing Ball Clay).		61 93 73 2,293	2,520 2,393 2,486 2,499	2,474	58 56 42 1,404	1,560 1,511 1,502 1,470	1,511	3,985
				Chalk, Chert and		3 12 32 32 1,456	1,503 1,455 1,474 1,580	1,503	5 6 404	443 443 428	435	1,938
gno	. 89		other	Total (including *.(slsrənim		6 33 93 1,736	1,868 1,829 1,851 2,034	1,896	53 90 93 1,201	1,448 1,410 1,404 1,374	1,409	3,305
Non-Ferrous Metalliferous	Minera)Tes.	Dead and Zinc C		3 6 42 991	1,042 1,011 944 1,018	1,004	15 37 33 437 2	524 460 420 409	453	1,457
ZZ		·spuno	qmo2 oin	Tin Ore and Arse		26 47 663	739 736 793 895	791	32 444 704 9	846 867 885 870	867	1,658
ne.				Total.		94 189 229 6,400	6,912 6,790 6,695 6,489	6,721	66 114 73 1,641	1,897 1,861 1,835 1,781	1,844	8,565
ronsto		Buipn	ces (incli	Other Occurrences Coal Measures		26 38 628	698 643 628 608	644	8 4 178	192 191 195 181	190	834
and L		Jurassic.		Other Sorts.		34 42 80 2,262	2,418 2,413 2,441 2,356	2,407	18 22 24 621 1	686 682 668 644	670	3,077
Iron Ore and Ironstone.		Jur		Cleveland,		54 103 75 2,242	2,474 2,419 2,312 2,239	2,361	28 56 17 400	501 473 466 456	474	2,835
Iron		-uon) stitem	West Coast He Phosphoric).			1,322 1,315 1,314 1,286	1,309	17 32 25 442 2	518 515 506 500	510	1,819
			Persons Employed,		WAGE EARNERS (at 12th December). Below ground or Inside Quarries.	Males:— Under 16 years of age 16 and under 18 years of age 18 ". 20 "." 20 years of age and over "	Total at 12th December " " 12th September " 13th June " 14th March	Average Numbers Employed Below Ground or Inside Quarries	Above ground or Outside Quarries. Males: Under 16 years of age 16 and under 18 years of age 18 ", 20 ". 20 years of age and over ". Females	Total at 12th December 12th September 13th June 14th March	Average Numbers Employed Above Ground or Outside Quarries	Total Average Number of Wage

	110112		,				
3,978	4,385 4,371 4,327 4,255	4,335	1,593 2,322 3,368 88,492	95,775 96,058 96,823 93,303	21,836	1	95,490
4,107	4,553 4,498 4,472 4,433	4,489	1,629 2,941 3,453 91,973	99,996 99,625 100,472 97,192	22,917	99,321	1
3,634	4,064 4,026 4,008 3,973	4,018	1,404 2,503 2,955 80,520	87,382 87,263 88,223 85,054	13,547 73,433	86,980	84,100
220 24	244 240 238 238	240	74 118 112 4,510	4,814 4,806 4,773 4,794	2,020	4,797	4,781
233	237 235 235 231 231	234	240 440 420 8,907	10,007 9,979 9,881 9,722	3,175	9,897	9,766
386	426 430 432 426	429	191 265 292 8,009	8,757 8,902 8,904 8,284	197 8,515	8,712	8,442
34	33.55	35	47 65 81 1,616	1,809 1,810 1,871 1,809	1,824	1,824	1,849
776	859 852 843 836	847	217 371 539 15,929	17,056 16,802 17,179 16,648	603	16,921	16,045
539	637 652 652 634	644	180 356 421 13,416	14,373 15,011 15,386 13,700	40 14,578	14,618	14,446
579	671 673 662 657	999	129 257 333 7,309	8,028 8,243 8,501 8,147	8,224	8,230	2,760
217	238 228 227 227 230	231	111 220 242 5,812	6,385 6,217 6,142 6,014	4,270 1,920	6,190	5,621
453	498 478 481 484	485	85 240 344 9,251	9,920 9,491 9,478 9,758	8,831	9,661	9,582
83	93 80 80 78	83	120 151 120 3,782	4,173 3,984 4,068 4,047	3,561	4,068	3,879
114	126 123 123 123	124	10 20 51 1,979	2,060 2,018 2,040 2,131	75 1,987	2,062	1,929
184	195 192 186 187	190	60 127 189 3,135	3,511 3,431 3,441 3,595	3,218	3,495	3,409
105	109 109 105 103	106	18 46 77 1,534	1,675 1,580 1,469 1,530	1,563	1,563	1,317
68	75 72 70 70	72	36 71 105 1,448	1,660 1,675 1,748 1,835	1,460	1,730	1,854
289	280 280 278 278 273	281	165 311 309 8,318	9,103 8,931 8,808 8,543	6,152	8,846	7,981
288	82222	35	30 46 833	918 858 847 814	859	859	734
120	123 1153 119 119	120	54 68 107 2,998	3,227 3,210 3,228 3,121	503 2,694	3,197	2,879
18	81 78 72 69	75	85 162 94 9,715	3,056 2,970 2,850 2,764	2,910	2,910	2,554
60	63 63 83 83	61	17 51 62 1,772	1,902 1,893 1,883 1,844	1,880	1,880	1,814
CLERKS AND SALARIED FERSONS (at 12th December). Females	Total at 12th December 12th September 13th June 14th March	Average Number of Clerks and Salaried Persons	GRAND TOTAL—WAGE EARNERS AND SALARIED PERSONS (including Glerks) (at 12th December). Under 16 years of age genden under 18 years of age 18 and under 18 years of age 18 "20".	Total at 12th December "12th September "13th June ", 14th March	Average Numbers Employed in 1936—At Mines	TOTAL	Total in 1935

* The other minerals included are Copper Precipitate and Ores of Copper, Gold, Manganese and Tungsten.

† Including Alum Clay and Shale, Barytes and Witherite, Bog Ore, Calespar, Celestine (Sulphate of Strontium), Diatomite, Fluorspar, Fuller's Earth, Gypsum (including Anhydrite), Iron Pyrites, Ochre, Umber, etc., and Salt,

‡ See Note † to Table 14.

\$ Dressers or Grinders: These figures include 9,835 male and 4 female dressers follows:—At mines, quarries, etc., Number producing many producing 437 Line and Arsenic Compounds 437 Linestone.

Lead and Zinc Ores 206 Sandstone 2,002 Sandstone 2,002 Sandstone 2,002 Sandstone 3,558 Ignous Rocks 2,182

TABLE 18.—Number of Persons Employed and Output of Minerals at Quarries under the Quarries Act, 1894, in Great Britain* from 1895.

Note.—For the number and cause of fatal accidents at the quarries at which these persons were employed see Table 52.

Decennial Period or	P	ersons employe	ed.	Output t
Year.	Inside.	Outside.	Total.	Output.‡
Annual Average. \[\begin{array}{llll} 1895-1904 \\ 1905-1914 \\ 1915-1924 \\ 1925-1934 \\ 1919	60,399 54,063 39,027 48,284 36,879 43,544 44,017 41,903 46,727 50,035 53,160 52,391 51,747 50,963 51,582 47,928 45,936 42,506 42,506 42,079	45,023† 31,134 22,306 27,640 20,197 24,206 25,962 25,586 27,711 29,393 29,558 29,442 29,945 29,003 29,195 28,737 27,176 24,637 23,888	105,422 85,197 61,333 75,924 57,076 67,750 69,979 67,489 74,438 79,428 82,718 81,833 81,692 79,966 80,777 76,665 73,112 67,143 65,967	Tons. 40,483,641 45,656,426 35,807,486 62,492,171 31,136,124 39,821,882 31,266,998 33,691,116 42,939,206 49,309,910 54,154,523 48,110,485 60,080,984 59,042,320 63,871,783 66,785,114 65,775,648 60,597,664 67,488,732
1934 1935 1936	44,548 45,840 47,663	24,820 24,945 25,867	69,368 70,785 73,530	79,014,456 83,915,338 93,275,011

* Including particulars for Ireland up to the year 1921.
† In 1899 a large number of workers employed outside quarries under the Quarries Act were transferred from the jurisdiction of the Mines to the Factory Department of the Home Office.
‡ The tonnage relates to dressed mineral in some cases (e.g., slate) and not the total quantity of rock quarried.

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in the Western

TABLE 19.—Percentages payable in excess of the Basis Wage Rates in each District during the Year 1936

Notes.—These percentages take no account of subsistence allowances to low-paid day-wage workers, for particulars of which see Table 21; nor do they include percentage additions paid to piece-writtens (see Table 22) where the hours of about during 1936 were less than they were prior to 16th July, 1919.

The minimum percentage additions to basis wage-rates payable in each district during the year are shown in Table 20.

For particulars of the flat-rate increases payable as from 1st January, 1936, see page 28.

	Date when Basis					Percent	Percentages on Basis actually paid in	is actually p	aid in				
District.	Rates were fixed.	January.	January, February.	March.	April.	May.	June.	July.	August.	September.	October.	November. December	December.
Northumberland	1870		40.00		40.00		40.00		40.00			40.00	
Durham	1879		65.00		65.00		65.00		65.00			65.00	
Cumberland	1915		22.50		22.50		22.50		22.50			22.50	
Lancashire and Cheshire*	1911		32.00		32.00		32.00		32.00			32.00	
Yorkshiret	1911		32.00		32.00		32.00		32.00			32.00	
North Derbyshire	1911	38.00	38.00	38.00	98.00	28.00	51.45	46.23	46.04	42.10 38.00	38.00	49.62	38.00
South Derbyshire	1911		29.00		36.23		29.00		29.00			29.00	
North Staffordshire	1161		39.00		41.00		41.00		39.00			39.00	
Cannock Chase	1911		40.00		99.09		46.22		40.00			40.00	
South Staffordshire and Wor-				1	:								
cestersnire	1161			38.00	38.00								
Leicestershire.	1911			32.00	32.00								
Warwickshifet	1911			20.00	93.00								
Somerset—Radstock	CIET (31.50	31.50								
Newbury	} 8161 {	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00
Bristol—East Bristol§:	, ,												
Hewers	} 1917 {	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00		1	1	Manager
Coalpit Heath:	_	00.71	17.00	00.77	17.00	00.71	17.00	17.00	17.00	1]]
Hewers	\$ 1917 5	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Others	7	27.00	27.00	27.00	27.00		27.00	27.00	27.00	27.00	27.00	27.00	27.00
South Wales and Monmouth-	1911	32.00	32.00	32.00	32.00		32.00	32.00	32.00	32.00	32.00	32.00	32.00
shire	1915	25.00	25.00		25.00	25.00	25.00	25.00	25.00		25.00	25.00	25.00
North Wales	1911	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
scotland	1888	100.00	100.00		100.00	100.00	100.00	100.00	100.00		100.00	100.00	100.00
	-				-					-			

Sub-Division and 27 per cent. * From July, 1936, a voluntary increase of 24 per cent, on gross wages was paid.

† The percentage additions paid throughout the year to surface workers in West Yorkshire were 30.33 per cent, in the Eastern Sub-Division.

‡ At certain collicries lower percentages were payable. § Two collicries only, one of which was abandoned in May and the other in August. ¶ The percentage addition paid throughout the year for underground workers receiving a base wage of 6s. or lower, and for surface workers receiving a base wage of 4s. lower was 37 per cent.

Note. In Shropshire there is no percentage applying to the whole of the district, individual arrangements being made at each colliery.

Notes.—For particulars of the percentages actually paid on basis rates during each month of the year and of subsistence wages, see Tables 19 and 21, respectively. For particulars of the flat rate increases payable as from 1st January, 1936, see page 28. TABLE 20.—Main Provisions of the District Wages Agreements in Operation during the Year 1936.

	Deficiencies,	Carried forward.	Carried forward.	Carried forward.	Cancelled at end of April in each year.	f 1.1.36 to 30.4.36, carried forward 30.4.36, accumulated deficiencie	cancelled. 1.5.36 to 31.12.36, to be cancelled at end of April, 1937, 50 per cent. of any surplus to be applied for recoupment.	Cancelled at end of April in each year.	Carried forward, 40 per cent, of any surplus to be applied for construct. Of the remaindent	of such surplus, 85 per cent. is applied to wages until the percentage payable on basis rates reaches 40, after which 50 per cent. of any remaining surplus is applied to wages.	One-third carried forward and one-third of any surplus to be applied for recoupment.
Hours.	Surface Workers handling Coal, exclusive of Mealtimes. (The hours of other Surface Workers were not necessarily the same.)	Per Week,	49	49	49	. 48	48 to 49	The same hours as underground workers.	46 h. 7m.		45 to 46}
	Underground. (N.B.—Figures in parentheses relate to Saturday.)	Per Shift. Hewers: 7½	weeks) Others: 7½ (7½)	7½ (6½)	7½ (6½)	7½ (6 to 7).	7½ (6 to 7)	7½ (usually ½ or ¼ shift) 7½ (usually ¾ shift)	7½ (2 day)		7½ (6 or 7)
	renod covered by the Ascertain- ment.	Months.	1	1	က			e e	· es		eo
	Minimum Percentage addition to Basis Rates,	40	65	22.5	32	32 Below ground,	Above ground, Eastern Sub-Div., 30.33; Western Sub-Div.,		(Enginemen, Firemen	boys aged 14-17, 45: 17-174, 40 and 17½-21, 35.)	87
-	basis nates for Piece- workers increased by	Per cent.		1	1	6.1	6.1		7		4.25
	Ratio of Wages: Profits.	87:13	87:13	85:15	Standard 87:13 Surplus 86:14	85:15	85:15	85:15	85:15	•	86:14
		:	:	:	:	:	:	: -:	:		:
		:	:	:		:	:	: :	:		:
	ct.	:	. Ant	:	+ e	: .		:	:		: .
	District.			:	Cheshii	•		e e	e :		hire
		Northumberland	Durham	Cumberland	Lancashire and Cheshire	Yorkshire:—South	West	North Derbyshire	South Derbyshire		North Staffordshire

Carried forward, 40 per cent. of	any surplus to be applied for recoupment, Of the remainder of such surplus, 85 per cent, is applied to wages until the percentage payable on basis rates reaches 45, after which 80 per cent, of any remaining surplus is annied to wages.	is applied to wases.	Cancelled at end of March in each year.	Carried forward but not beyond 12 months.	1	Carried forward.	I		1	Carried forward but one-eighth of total deficiency cancelled at end of each quarter.	Carried forward. One-third of any surplus to be applied for recoupment.	Carried forward.	Carried forward.
46 (including mealtimes)		1,	44h. 25m. (including meal- times)	46½ to 49	44 to 49	45 (including mealtimes)	494	49 or 49‡	49 (average)	ends oct 	8 hours per day, mealtimes to be arranged at each colliery.	44 to 47 (including mealtimes)	85:15 — 100 2 7½ (7½) 48 Carried forward
1 7½ (3 day)		7½ (5½-7½)	7½ (5)	7½(5½)	7½ (5¾)	7½ (7½)	7½ (7½)	73 (7)	8 bank to bank (7 bank to bank)	7½ (6 or 6½)	7½ (7½)	7½ (6½)	73 (73)
7		1	12	12	1	<u>ო</u>	1	1	1.	6	ဇာ	0	61
. 40	(Mechanics and other surface workers not handling coal, 42)	38	32	43	1	68.75	From 1.1.36 to 31.7.36, 31.5 Erom 1.8.36 to 31.12.36, 36.5	Hewers and Pieceworkers 15 Others 17	Hewers and Pieceworkers 25 Others 27	Lower Paid Men 37 Others 32	25.	22	100
5		رم م	7.1	9	1	ı	1	1	1	1	1	1	1
85:15		1	85:15	85:15	1	Standard 100: 15 Surplus 85: 15		1	and the second	Ratio proportioned in accordance with an agreed formula,	85:15	84:16	85:15
:		:	:	:	:	:	:	:	:	•	:	:	:
:		:	:	:	:	:	:	:	:	:	:	:	:
:		:	:	:	:	:	:	: .	:	*	thshir	:	:
:		:	:	:	:	:	:	:	:	:	lonmou	:	:
Cannock Chase		South Staffordshire‡	Leicestershire	Warwickshire	Salop‡	Forest of Dean	Somersetshire;	Bristol‡:— East Bristol**	Coalpit Heath	Kent	South Wales and Monmouthshire	North Wales	Scotland

according to the arrangements at the different collieries. At most of the collieries, hewers, fillers, etc., work only 11 shifts per fortuight; but other workers at all collieries work 12 shifts per fortuight, it required.

† From July, 1986, a voluntary increase of 2½ per cent. on gross wages was paid.

† No agreement applying to the whole district is in force, but the figures shown represent the conditions normally observed.

** Two collieries only, one of which was abandoned in May and the other in August.

TABLE 21.—Subsistence Wages paid during the Year 1936

Note.—Except where otherwise stated, the rates apply to underground

District.	Rate of Subsistence Wages.
Northumberland	6s. 9½d. per day.
Durham	6s. $6\frac{1}{2}d$. per day.
Cumberland	Men 21 years of age and over. 7s. 1d. per shift. Men 18 years of age and under 21. 6s. 8.85d. per shift, subject to a maximum addition of 8.85d. per shift. Women, 3s. 9.61d. per shift.
Lancashire and Cheshire	Workers 21 years of age and over. An allowance not exceeding 1s. per shift to make up to 7s. 9d. per shift, subject to a minimum of 7s. for men and 4s. 9d. per shift for women. Workers 18 years of age and under 21. An allowance not exceeding 9d. per shift to make up to 7s. per shift. Workers 16 years of age and under 18. An allowance not exceeding 6d. per shift to make up to 5s. per shift.
Yorkshire	An allowance of 6d. per shift, provided the gross daily wage does not exceed 8s. 9d. per shift.
Nottinghamshire, Derbyshire, North	An allowance of 6d. per shift, subject to a maximum of 8s. 9d. per shift, and a minimum of 7s. 11d. per shift.
Derbyshire, South	Underground workers— 7s. 8d. per shift. Surface workers— 7s. 4d. per shift.
Staffordshire, North	From 1st July, 1934, the subsistence rates previously in operation were merged with the basis rates.
Cannock Chase	An allowance of $6d$ per shift, provided the gross daily wage does not exceed $8s$. $9d$. per shift.
Staffordshire, South and Worcester.	6s. 2d. per shift.
Leicestershire	An allowance of not more than 6d. per shift, subject to a maximum of 8s. 3d. per shift, and a minimum of 7s 6d. for underground workers, and 7s. 2d. per shift for surface workers.
Warwickshire	For the majority of the collieries the subsistence wage varied from 8s. $3d$. to 8s. $5\frac{1}{2}d$. per shift for underground workers and from 7s. $1\frac{3}{4}d$. to 7s. $5\frac{1}{2}d$. for surface workers. At three collieries the rate for underground workers varied from 7s. $11d$. to 8s. $3d$. during the year.

to Colliery Workers, subject to the flat rate increases shown on p. 28.

and surface workers of 21 years of age and over.

District.	Rate of Subsistence Wages.
Salop	Varying from 5s. 2d. to 6s. per shift, according to colliery.
Forest of Dean	6s. $1\frac{1}{2}d$. per shift.
Somersetshire:— Radstock District	An allowance of 9d. per shift for married workmen (and workmen 18 years of age and over, who are the sole support of their parents), subject to a maximum of 6s. 11d. per shift and 40s. per week.
Bristol:— Coalpit Heath	6s. 9d. per day for married workmen and for single workmen having a relative entirely dependent on them.
East Bristol	6s. 9d. per day, subject to a maximum addition of 6d. per day for underground workers, and 1s. per day for surface workers.
Kent	 Married men (except Craftsmen). 8s. 7½d. per shift for underground workers, and 8s. 2d. per shift for surface workers. Widowers and Single Men (on Surface). 6s. 9d. per shift. Boys (Underground and on Surface). An allowance of 1s. 1½d. per shift. Craftsmen. An allowance of 1s. 3d. per shift. In addition, all workmen entitled to a subsistence allowance receive 3d. per shift for each child under 14 years of age.
South Wales and Monmouthshire	Adult day-wage workmen and youths over 16 years of age who are the sole support of a family, 8s. 1d. per shift. Youths 14 to 16 years of age who are the sole support of a family, 6s. per shift. All other youths, an allowance of 4d. per shift.
North Wales	6s. per shift.
Scotland (Surface workers only.)	Men 18 years of age and over. An allowance of 1s. per shift to make up to 7s. per shift. Youths under 18 years of age. An allowance of 6d. per shift to make up to 3s. 6d. per shift. Women 18 years of age and over. An allowance of 8d. per shift to make up to 5s. per shift. Girls under 18 years of age. An allowance of 4d. per shift to make up to 2s. 6d. per shift.

TABLE 22.—Average Earnings per Shift of Coal Miners in the

P	eriod.	Northur berland		Yorkshire.	North Derbyshire and Notting- hamshire.	South Derbyshire, Leicester- shire, Cannock Chase and Warwick- shire.	Lanca- shire, Cheshire and North Stafford- shire.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
June June		6 2½ 8 7¾ 7 6½ 7 4¾ 7 8 7 8¾	6 2½ 9 2¼ 8 1½ 7 11½ 8 0¾ 8 0¾	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6 11 10 61 9 9 9 81 9 91 9 81	(a) Cash 6 01 9 9 9 31 9 3 9 21 9 21
Annual Average.	1932	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c cccc} 10 & 2 \\ 10 & 1\frac{3}{4} \\ 10 & 2 \\ 10 & 3\frac{1}{2} \\ 11 & 3 \end{array} $	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Jan. t April, July	o March , June , Sept. , Dec	7 8 7 8 7 8 7 9 4	8 0½ 8 0¾ 8 1 8 1½	$ \begin{array}{c cccc} 10 & 1\frac{1}{2} \\ 10 & 1\frac{1}{2} \\ 10 & 1\frac{3}{4} \\ 10 & 2\frac{1}{4} \end{array} $	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 9 & 2 \\ 9 & 1 \\ 9 & 2\frac{1}{2} \\ 9 & 3\frac{1}{2} \end{array}$
Jan. t	o March , June , Sept. , Dec	7 8 7 7 ³ 7 7 ¹ 7 8	8 03 8 03 8 11 8 11	$ \begin{array}{c cccc} 10 & 2 \\ 10 & 2 \\ 10 & 1\frac{1}{2} \\ 10 & 2\frac{1}{2} \end{array} $	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	9 8½ 9 7¾ 9 8¾ 9 8	9 3½ 9 3½ 9 4 9 4
Jan. t April, July	o March , June , Sept. , Dec	7 8½ 7 8½ 7 8½ 7 8¾	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c cccc} 10 & 4\frac{3}{4} \\ 10 & 5\frac{1}{4} \\ 10 & 5\frac{1}{4} \\ 10 & 4\frac{1}{2} \end{array} $	9 8 9 7 1 9 7 1 9 7 <u>1</u>	$\begin{array}{cccc} 9 & 3\frac{1}{2} \\ 9 & 4\frac{1}{4} \\ 9 & 2\frac{1}{2} \\ 9 & 2\frac{1}{2} \end{array}$
Jan. t April, July	o March , June , Sept. , Dec	7 9 ³ / ₂ 7 9 ¹ / ₂ 7 9 ³ / ₄	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c cccc} 10 & 2 \\ 10 & 1\frac{1}{2} \\ 10 & 2\frac{1}{4} \\ 10 & 2\frac{1}{2} \end{array} $	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	9 7½ 9 7¼ 9 8¾ 9 9	$\begin{array}{cccc} 9 & 2\frac{1}{2} \\ 9 & 2\frac{3}{4} \\ 9 & 1\frac{1}{2} \\ 9 & 2\frac{3}{4} \end{array}$
Tan, t	o March , June , Sept. , Dec	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	8 0½ 8 0½ 8 0½ 8 1½	$ \begin{array}{c cccc} 10 & 2\frac{1}{4} \\ 10 & 3\frac{1}{4} \\ 10 & 4 \\ 10 & 4\frac{3}{4} \end{array} $	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	9 9 9 9½ 9 10 9 9½	9 3 9 3 9 4 9 4 9 4 3
Jan. t April, July,	o March , June , Sept. , Dec	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{ c c c c }\hline 11 & 2\frac{1}{2} \\ 11 & 2\frac{1}{2} \\ 11 & 3\frac{1}{2} \\ 11 & 3\frac{3}{4} \\ \end{array}$	$ \begin{array}{c cccc} 11 & 3\frac{1}{4} \\ 11 & 6\frac{1}{4} \\ 11 & 4\frac{1}{4} \\ 11 & 5\frac{3}{4} \end{array} $	$ \begin{array}{c cccc} 10 & 9\frac{1}{4} \\ 11 & 1 \\ 11 & 0\frac{3}{4} \\ 11 & 2 \end{array} $ (b)	$ \begin{array}{cccc} 10 & 3\frac{1}{2} \\ 10 & 4 \\ 10 & 5 \\ 10 & 5\frac{1}{2} \end{array} $ Value of
. ,,	1927	$\begin{array}{c cccc} 1 & 1\frac{1}{2} \\ 1 & 0\frac{1}{2} \\ 1 & 0 \\ 1 & 1\frac{1}{4} \\ 1 & 0\frac{1}{4} \end{array}$	$\begin{array}{c cccc} & 1 & 2\frac{1}{2} \\ & 1 & 1 \\ & 1 & 0\frac{1}{2} \\ & 1 & 1\frac{1}{4} \\ & 1 & 1 \end{array}$	$\begin{bmatrix} 0 & 4\frac{1}{4} \\ 0 & 4 \\ 0 & 3\frac{3}{4} \\ 0 & 3\frac{3}{4} \\ 0 & 4 \end{bmatrix}$	$\begin{array}{ c c c c c }\hline 0 & 4\frac{3}{4} & \\ 0 & 4 & \\ 0 & 3\frac{3}{4} & \\ 0 & 3\frac{3}{4} & \\ 0 & 3\frac{3}{4} & \\ \end{array}$	$ \begin{array}{cccc} 0 & 4\frac{1}{2} \\ 0 & 4 \\ 0 & 4 \\ 0 & 4\frac{1}{4} \end{array} $	0 034 0 034 0 012 0 012 0 012
,, ,,	1932 1933 1934 1935	$\begin{array}{cccc} 1 & 0\frac{1}{4} \\ 0 & 11\frac{3}{4} \\ 0 & 11 \\ 0 & 11\frac{1}{4} \\ 0 & 11\frac{1}{2} \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 4 0 4 0 4 0 4 0 4	$\begin{array}{cccc} 0 & 4\frac{1}{4} \\ 0 & 4\frac{1}{4} \\ 0 & 4\frac{1}{4} \\ 0 & 4\frac{1}{4} \\ 0 & 4\frac{1}{4} \end{array}$	$\begin{array}{ccc} 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{4} \\ 0 & 0\frac{1}{4} \end{array}$

^(*) The figures shown for South Wales and Monmouthshire relate to the years

^(†) The maximum hours of labour below-ground were reduced from 8 to 7 per was restored in all districts except Yorkshire, Nottinghamshire, North Derbyshire Northumberland and Durham the hours of hewers were increased by 1 hour to and in 1931, for particulars of which see Table 20 of the Tenth and Eleventh Annual

Principal Districts of Great Britain in 1914 and from 1927.

South Wales	Cumberland, North Wales, South Staffordshire.			Britain.
and Mon- mouth- shire. (*)	Shropshire, Bristol, Forest of Dean, Somersetshire and Kent.	Scotland.	Average Earnings.	Quantity of Coal raised per man- shiftworked. (†)
s. d. Earnings.	s. d.	s. d.	s. d.	cwts.
6 9 10 034 9 61/2 9 53/4 9 6 8 111/2	5 634 9 011 8 834 8 734 8 914 8 834	6 9 9 7½ 9 2¾ 9 2 9 2½ 9 0¾	6 5\\\\ 10 0\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	20·32 20·61 21·29 21·69 21·62 21·61
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8 9½ 8 8 8 8 8 10½ 9 7½	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	21 · 99 22 · 47 22 · 94 23 · 35 23 · 54
$\begin{array}{cccc} 9 & 0\frac{1}{2} \\ 8 & 11\frac{1}{4} \\ 8 & 11\frac{1}{2} \\ 8 & 10\frac{3}{4} \end{array}$	8 9 8 9 8 8½ 8 8¾	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 9 & 2\frac{1}{2} \\ 9 & 2\frac{1}{4} \\ 9 & 2\frac{1}{2} \\ 9 & 2\frac{1}{4} \end{array}$	21·78 21·44 21·35 21·86
$ \begin{array}{c} 8 & 11 \\ 8 & 11\frac{1}{4} \\ 8 & 11\frac{1}{2} \\ 8 & 11\frac{1}{2} \end{array} $	8 9½ 8 9½ 8 9½ 8 9	8 10 8 9 1 8 9 1 8 9 <u>1</u>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	21·98 21·78 21·50 22·62
8 11 8 11 8 10 ³ 8 11	8 8 8 8½ 8 8 8 7¾	8 9 8 9 8 8 ³ / ₄ 8 9	9 13 9 13 9 11 9 11 9 12	22.67 22.07 22.05 23.00
$ \begin{array}{c} 8 & 11\frac{1}{4} \\ 8 & 11\frac{1}{4} \\ 9 & 01 \\ 9 & 2\frac{3}{4} \end{array} $	8 7 3 8 7 1 8 7 3 8 9	8 8 4 8 9 8 9 8 9 4	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	23·32 22·59 22·55 23·23
$\begin{array}{cccc} 9 & 2\frac{3}{4} \\ 9 & 3\frac{3}{4} \\ 9 & 3\frac{3}{4} \\ 9 & 4\frac{1}{4} \end{array}$	8 9½ 8 9¾ 8 10½ 8 11¼	$ \begin{array}{cccc} 8 & 9\frac{3}{4} \\ 8 & 9\frac{3}{4} \\ 8 & 9\frac{1}{2} \\ 8 & 10 \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	23·40 23·10 22·93 23·89
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	9 6 ² / ₄ 9 6 ¹ / ₂ 9 7 ¹ / ₄ 9 8 ¹ / ₄	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	23·95 23·26 23·12 23·76
Allowances $0 3\frac{1}{4}$ $0 2\frac{3}{4}$ $0 2\frac{1}{2}$ $0 2\frac{3}{4}$ $0 2\frac{3}{4}$	0 23/4 0 25/4 0 25/4 0 25/4 0 25/4 0 3	$\begin{array}{ccc} 0 & 0\frac{3}{4} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \end{array}$	$\begin{array}{cccc} 0 & 5 \\ 0 & 4\frac{3}{4} \\ 0 & 4\frac{1}{2} \\ 0 & 4\frac{3}{4} \\ 0 & 4\frac{1}{2} \end{array}$	
$\begin{array}{ccc} 0 & 2\frac{3}{4} \\ 0 & 2\frac{3}{4} \\ 0 & 2\frac{3}{4} \\ 0 & 2\frac{3}{4} \\ 0 & 2\frac{3}{4} \end{array}$	$\begin{array}{ccc} 0 & 3 \\ 0 & 2\frac{3}{4} \\ 0 & 2\frac{1}{2} \\ 0 & 2\frac{1}{4} \\ 0 & 2\frac{3}{4} \end{array}$	$\begin{array}{ccc} 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{2} \\ 0 & 0\frac{1}{4} \\ 0 & 0\frac{1}{2} \end{array}$	$\begin{array}{ccc} 0 & 4\frac{3}{4} \\ 0 & 4\frac{1}{2} \\ 0 & 4\frac{1}{2} \\ 0 & 4\frac{1}{4} \\ 0 & 4\frac{3}{4} \end{array}$	

ended January, 1928 to 1937.

shift on 16th July, 1919. After the stoppage of work in 1926 the eight-hour day and Kent, where the hours of labour were increased from 7 to $7\frac{1}{2}$ daily. In $7\frac{1}{2}$ per day. Further changes in hours of labour took place in December, 1930, Reports. The maximum hours below-ground have since been $7\frac{1}{2}$ per day.

TABLE 23.—Average Onarterly Earnings of Coal Miners in each District from 1930.

1		1									
Great Britain.	Tonnage of coal raised per person employed.	Tons.	66.26 65.56 65.58 67.87 72.42	74.61	67.32 64.08 59.69 71.18	71.46 62.78 63.31 73.76	76·18 68·45 68·51 76·43	75.61 70.87 70.40 81.56	80.75 72.40 73.80 80.92		1.1
eat B	စ္ ဗွ်	d.	10187	0	4	2048	0000	0000	10 00 4 to	44000	0 4
Gre	erag	s,	177	12	2888	20029	111	16 6 8 16	13 19 7	40000	410
	Average Earnings.	¥	0000000	320	255 255 285 285 285 285 285 285 285 285	26,28	27 27 30	288	333		-
		d.	7 6 0 4 8 	400	4959	0920	111 8 8	2000	41 611	100	4 %
	Scotland	°°	40000	12 12	2622	7887	4712	6 0 16	01 19 19 8	000000	2 23
	Sco	7	20 20 20 20 20 20 20 20 20	33	34 80	32 31 34 34	33 35 35	32733	38 34 88	. 00000	00
ales,	nire, re, , ,)ean, hire	d.	77 22 2	0.0	14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2712	V 4 9 0 10	9804	00000	000=0	9 %
Wa Wtb	ffordshir propshir Bristol, est of De nersetsh ad Kenl	s,	0341070	13	16 0 0	15 5 16 16	23 3	5 11 17 17	111111111111111111111111111111111111111	14 11 15 15 15	13
North Wales, South	Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire and Kent.	42	0,00,00,00	30	28 28 27 29	29 28 29 29	32828	30,031	33 33 34 34	er).	00
		d.	00000	100	00000	9	1403	111	07.04	Quart 11 9 8 6 6 6	901
	M. M.	S.	100480	14 10	18 18 9	3 7 6	100	8 14 16 16		1614444 17444	14
	South Wales and Mon- mouthshire.*	y wou	0,00,00,00	30	27 27 29	28 28 29 29	28 30 31	330 33		1886 000 000	00
	re hire.	d. 1	2000	96	4 0 11 7	8004		8048	6000	(Ave. 11 8 4 0 0 10	010
Lanca	shire, Cheshire and North affordshir	S.	13208722	19	4008	01 28 6	18 17 7	16 10 10	5211	100000	-6
L.	shire, Cheshire and North Staffordshire	J. was	27. 27. 28. 28. 28. 28.	29	28 24 28	28 28 28	30 27 30 30	31 27 32 32	322	ii Mooooo	00
9	hire, k nd k-	d. I	10 Paris	10	0927	8 9 1 1 1 2 9 8	8020	1270	8064	11 11 10 7 0	
South	canock Canock Chase and Warwick-	S.	12 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18	16 10 19 19	7 10 14 16	3 15 15	118 111 111		0 19 19 19 0	0 %
South	Leicestershire Cannock Chase and Warwick- shire.	J (0)	(a) 200 200 200 200 200 200 200 200 200 20	34	28 25 27	23 23 27	31 25 25 28	30 31 31 31	37 32 31 36	# 0 + 0 0 + 1	
	ire	d. 1	40 25 1	2.9	7007	0022	1111	3 10 7	4020		64 10
rth	ysh nd ting shir	S	801004	13	11 12 17 18	7 9 4 1 4 1	01210	46 46	. 9 18 6 8 19 8 8 19 8 19 8 19 8 19 8 19	12777 A	18
Ž	Derbyshire and Notting- hamshire.	72	222	3,50	28 28 28 28	25 25 29	31 25 26 29	25 27 31	35 34 34 34	20000	00
	ęį.	d.	0000	0 0 10	9 4 0 8	8094	3120	10 7 8	111 52 7	00000	110
	cshi i	s,	15 15 12 12	9	13	12222	117	2552	~ co co ∞	18 17 17	16
	Yorkshire	42	22.00	33	24 28 28	25 25 26 26 27	30 88 89	30 27 32 32	36 31 32 35	00000	00
	d	d.	20 00 I	1010	40-8	7053	11.88	10 5	0014	000k7/	110
	Durham.	ŝ	482274	00	0 0 0	113	4 1 6 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	5 17 18 18	92780	07 11 11 11 11 11 11 11 11 11 11 11 11 11	12
	Dun	7	23 23 23 23 23 44 44 30	26	224	23 24 26 26	25 25 27	26 25 27	30 30 30 30	000000	60 0
		d.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~ · ·	455	4 6 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	800%	8471	6967	08 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
	North- umber- land.	S	19 17 12 8	11 2	112	16 18 7	747	8 2 2 6 6	14 19 0 6	00004	10.1
	No mar	42	22222	27	25 23 27 27 27		27 26 27 28	27 27 28 28	28 30 31	00000	<i>ಯ</i> ೧
			:::::	::	::::	::::	::::	. ::::	::::	:::::	:
	Period.		:::::	::	1932. June Sept. Dec.	1933. June Sept. Dec.	1934. to Mar. ", June ", Sept.	Mar. June Sept. Dec.	Mar. June Sept. Dec.	:::::	:
	щ		0 H 0 H 4	200	ty: to	ty: to		t to	r	82224	25.2
		1	1930 1931 1932 1933 1933	1935 1936	Jan. Apr. July Oct.	Jan. July Oct.	Jan. Apr. July Oct.	Jan. Apr. July Oct.	Jan. Apr. July Oct.	1930 1931 1932 1933 1934	1935

* The figures shown for South Wales and Monmouthshire relate to the years ended January, 1931 to 1937.

Table 24.—Average Costs of Production, Proceeds and Profits of the Coal Mining Industry, and Tonnage of Coal disposable commercially from 1922.

					Cos	s of Prod	action.		Bala	ince.	
	Period.		Pro- ceeds.	Wages.	Stores and Timber.	Other Costs.	Royalties.	Total Costs of Produc- tion.(d)	Credit.	Debit.	Approximate Tonnage of Coal disposable commercially
			(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	
	C 1000		10 11	. 10 10	Per ton		posable com	mercially.	0 449		
	1922 1923 1924	••	$\begin{array}{c cccc} 19 & 1\frac{1}{2} \\ 19 & 9\frac{1}{2} \\ 19 & 9\frac{1}{2} \end{array}$	12 13 12 41 13 3	2 34 2 2 11	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 7	18 13 17 71 18 71 18 71	$ \begin{array}{c c} 0 & 11\frac{3}{4} \\ 2 & 2 \\ 1 & 2 \end{array} $	_	227,500,000
	1924	••	$\begin{vmatrix} 19 & 9\frac{1}{4} \\ 17 & 1 \end{vmatrix}$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2 11/2	2 10	0 61	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	31		243,900,000
ige.	1926(c)		15 83	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 92	2 81	0 61	(a) 17 2 1 (b) 14 5 2	1 3	-	80,800,000
Annual Average.	1927 1928 1929 1930 1931		15 1½ 13 3½ 13 11 14 1 14 0½	10 7½ 9 5¾ 9 2 9 3¾ 9 2¾	1 98 1 71 1 68 1 71 1 68	2 83 2 84 2 42 2 5 2 62	0 61 0 6 0 6 0 53 0 6	15 7 14 21 13 61 13 81 13 81 13 81	$\begin{bmatrix} - & & & & & \\ 0 & 4\frac{1}{2} & & & \\ 0 & 4\frac{1}{4} & & & \\ 0 & 3\frac{1}{2} & & & \end{bmatrix}$	0 54 0 11 — —	230,900,000 219,300,000 239,300,000 222,500,000 203,400,000
	1932 1933 1934 1935 1936	••	13 10 13 61 13 41 13 6 14 71	9 03 8 91 8 71 8 61 9 2	1 5½ 1 5½ 1 6½ 1 6½ 1 7	2 8½ 2 8½ 2 6 2 6 2 6¼	0 6 0 6 0 54 0 54 0 54	13 8 13 33 12 111 12 113 13 8	0 2 0 23 0 5 0 61 0 111		192,200,000 191,500,000 204,900,000 206,400,000 212,000,000
April July	1931. to March l,, June ,, Sept. ,, Dec.	::	14 3 1 13 9 1 13 10 14 1	9 2½ 9 3½ 9 4½ 9 1½	1 6½ 1 6¾ 1 6¼ 1 5¾	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 H 0 61 0 61 0 6	13 6 1 13 11 14 0 13 6	0 9 0 7	0 1½ 0 2	54,200,000 49,300,000 47,100,000 52,800,000
April Iuly	1932. to March ", June ", Sept. ", Dec.	::	14 03 13 8 13 71 13 11	9 03 9 13 9 31 8 93	1 5½ 1 6 1 6 1 5	2 6 4 2 9 1 3 0 1 2 6 4 2 6 4	0 6 0 6 0 64 0 6	13 6½ 13 10 14 2¾ 13 2½	0 6½ — 0 8¾	0 2 0 7½	51,500,000 47,700,000 42,400,000 50,600,000
April	1933. to March ,, June ,, Sept. ,, Dec.	••	13 11 13 43 13 31 13 63	8 9 8 11½ 8 11 8 6½	1 51	$ \begin{array}{c cccc} 2 & 6\frac{3}{4} \\ 2 & 11 \\ 2 & 10\frac{1}{2} \\ 2 & 5\frac{1}{2} \end{array} $	0 6 0 61 0 61 0 6	13 11 13 91 13 81 12 92	0 9 1 - 0 9	0 4½ 0 5	51,400,000 44,400,000 43,800,000 51,900,000
April	1934. to March I,, June ,, Sept. ,, Dec.	::	13 7½ 13 2½ 13 1½ 13 6½	8 5½ 8 8¼ 8 6¾ 8 6¾	1 51	2 4½ 2 7 2 7¾ 2 5½	0 53 0 6 0 6 0 53	12 7½ 13 1¾ 13 3½ 12 11	1 01 0 01 - 0 71	_ 0_1½	54,800,000 48,500,000 47,900,000 53,700,000
April	1935. to March 1,, June ,, Sept. ,, Dec.	••	13 6½ 13 3 13 2 13 11¾	8 6 8 7½ 8 8¼ 8 4¾	1 61	2 5 2 7½ 2 8¼ 2 4¼	0 53 0 53 0 53 0 53 0 53	12 9 4 13 2 1 13 3 4 12 7 3	0 8½ 0 0¾ - 1 4	_ 0_13	53,000,000 49,500,000 48,000,000 55,900,000
April July	1936. to March l,, June ,, Sept. ,, Dec.	• • • • • • • • • • • • • • • • • • • •	14 8½ 14 3¾ 14 4½ 15 0½	8 113 9 31 9 31 9 13	1 74	2 4½ 2 7½ 2 7½ 2 5½	0 5½ 0 5¾ 0 5¾ 0 5½ 0 5½	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 5 ³ / ₄ 0 4 ³ / ₄ 0 5 1 5		56,100,000 49,800,000 50,500,000 55,600,000

⁽a) Including Subvention.

⁽b) Excluding Subvention.

⁽c) January-April. On 1st May, 1926, the production of coal at almost all the mines was suspended and the usual particulars of the proceeds, costs of production, &c., for the last eight months of 1926 are not available.

⁽d) After deducting the proceeds of miners' coal.

Note.—Generally speaking, Revenue and Expenditure follow the accounting principles which are adopted by the Industry in making wages ascertainments.

Proceeds represent the amount received for coal and other minerals* disposed of commercially per ton of coal sold after deducting selling and delivery expenses.

Wages include subsistence and other allowances to low-paid day-wage workers.

Other Costs of Production include management, salaries, insurances, repairs, office and general expenses, contribution to the Miners' Welfare Fund, remuneration of working proprietors, depreciation, &c. They do not include certain items such as interest on debentures or other loans, bank charges, amortisation and taxation which the Mining Association of Great Britain estimate to amount to 3d. per ton or more.

Royalties include the rental value of freehold minerals where they are worked by the proprietor.

^{*} Mines where coal is an ancillary mineral are excluded.

Table 25.—Average Total Costs of Production per ton of coal Average Proceeds of the Coal

	N	orthumberlar	ıd.		Durham.	
Period.	Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.
Annual Annual Average 1930	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 11 7½ 11 6½ 11 7¾ 11 4¾ 11 2½	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	s. d. 7 1134 7 1012 7 934 7 9 7 834	s. d. 12 9½ 12 9 12 10½ 12 8¼ 12 6¼	s. d. 13 2 12 8½ 12 6 12 3¾ 12 3¼
1935 1936 1933.	7 0¼ 7 6¾	$egin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c cccc} 11 & 6\frac{1}{2} \\ 12 & 8 \end{array}$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12 8 13 2	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
January-March April-June July-September October-December 1934.	$ \begin{array}{c cccc} 7 & 1\frac{1}{4} \\ 7 & 1\frac{1}{2} \\ 7 & 0 \\ 6 & 10\frac{3}{4} \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c cccc} 11 & 5\frac{1}{2} \\ 10 & 11\frac{1}{2} \\ 10 & 10\frac{1}{2} \\ 11 & 3\frac{3}{4} \end{array}$	$\begin{array}{cccc} 7 & 9 \\ 7 & 10 \\ 7 & 10 \\ 7 & 7\frac{1}{2} \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 12 & 6\frac{1}{2} \\ 12 & 3\frac{3}{4} \\ 12 & 2 \\ 12 & 2\frac{1}{4} \end{array}$
January-March April-June July-September October-December 1935.	6 11 6 10¼ 6 11 6 11½	$\begin{array}{c cccc} 11 & 1 & \\ 11 & 2 & \\ 11 & 2 & \\ 11 & 4\frac{1}{2} & \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 12 & 4 \\ 12 & 4\frac{1}{2} \\ 12 & 7\frac{1}{2} \\ 12 & 8\frac{1}{4} \end{array}$	12 4 12 2 12 13 12 43 12 43
January-MarchApril-JuneJuly-SeptemberOctober-December1936.	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	11 7½ 11 3 11 0 12 2¾	$\begin{array}{cccc} 7 & 8\frac{1}{2} \\ 7 & 8\frac{1}{2} \\ 7 & 10 \\ 7 & 8\frac{1}{4} \end{array}$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12 3½ 12 3½ 12 2¾ 12 7½
January-March April-June July-September October-December	7 5 ³ / ₄ 7 6 7 7 7 8	11 10 12 1½ 12 2 12 4½	$\begin{array}{cccc} 12 & 9 \\ 12 & 4\frac{3}{4} \\ 12 & 2\frac{3}{4} \\ 13 & 3 \\ \end{array}$	$ \begin{array}{c cccc} 8 & 1\frac{3}{4} \\ 8 & 3\frac{1}{2} \\ 8 & 3\frac{1}{2} \\ 8 & 3\frac{1}{2} \end{array} $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 13 & 3 \\ 13 & 2 \\ 13 & 0\frac{3}{4} \\ 13 & 5\frac{1}{2} \end{array}$

Period.		shire, Cheshi rth Staffordsh			outh Wales a Ionmouthshire	
Period.	Wages Cost.	Total Costs incl. Wages.	Pro-	Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.
Average Averag	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 16 9 16 10 16 53 15 101 15 3	s. d. 16 8\frac{3}{4} 17 0 16 7\frac{1}{2} 15 11\frac{3}{4} 15 8\frac{1}{4}	s. d. 10 3 9 11½ 10 0 9 10¼ 9 9¾	s. d. 15 4 15 2½ 15 6¼ 15 5 15 1½	s. d. 15 6 15 2 ³ / ₄ 15 6 ³ / ₄ 15 0 ¹ / ₄
1935 1936 1933.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{vmatrix} 15 & 1 \\ 16 & 0\frac{3}{4} \end{vmatrix}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$egin{array}{c cccc} 15 & 2 & & \\ 15 & 7 \frac{1}{2} & & \\ \end{array}$	15 1 15 7
January-March April-June July-September October-December	$ \begin{array}{cccc} 10 & 6\frac{3}{4} \\ 10 & 11\frac{3}{4} \\ 11 & 1\frac{3}{4} \\ 10 & 6\frac{1}{4} \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 16 & 6\frac{1}{4} \\ 15 & 8\frac{3}{4} \\ 15 & 4\frac{1}{4} \\ 16 & 1\frac{1}{2} \end{array}$	$\begin{array}{cccc} 9 & 9\frac{1}{4} \\ 10 & 1 \\ 9 & 10\frac{3}{4} \\ 9 & 7\frac{3}{4} \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	15 4½ 15 6¼ 15 3¼ 15 0
1934. January-March April-June July-September October-December 1935.	$\begin{array}{cccc} 10 & 1\frac{1}{2} \\ 10 & 6\frac{1}{2} \\ 10 & 7\frac{1}{4} \\ 10 & 1\frac{3}{4} \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 16 & 0 \\ 15 & 7 \\ 15 & 2\frac{1}{2} \\ 15 & 10\frac{1}{2} \end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
January-March April-June July-September October-December 1936.	$ \begin{array}{cccc} 10 & 0 \\ 10 & 2\frac{3}{4} \\ 10 & 5\frac{1}{2} \\ 9 & 8\frac{1}{2} \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 15 & 10\frac{1}{4} \\ 15 & 4\frac{1}{2} \\ 15 & 4 \\ 16 & 2\frac{1}{4} \end{array}$	$\begin{array}{cccc} 9 & 10\frac{1}{4} \\ 9 & 10\frac{1}{2} \\ 9 & 10\frac{1}{2} \\ 9 & 7 \end{array}$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	14 10½ 15 0½ 15 0¼ 15 4¼
January-March April-June July-September October-December	$ \begin{array}{cccc} 10 & 7 \\ 11 & 0\frac{1}{4} \\ 11 & 5 \\ 10 & 11\frac{1}{4} \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17 8 ¹ / ₄ 17 0 ³ / ₄ 16 8 ¹ / ₄ 17 7 ¹ / ₄	$ \begin{array}{cccc} 10 & 0\frac{3}{4} \\ 10 & 2\frac{1}{4} \\ 10 & 1\frac{1}{4} \\ 9 & 8 \end{array} $	$\begin{array}{ c c c c c }\hline 15 & 10\frac{1}{4} \\ 15 & 11\frac{1}{2} \\ 15 & 9 \\ 15 & 0\frac{3}{4} \\ \hline \end{array}$	15 4 ³ / ₄ 15 5 ¹ / ₄ 15 9 15 9

^{*} The figures shown for South Wales and Monmouthshire Note.—For particulars of the composition of the costs of

disposable commercially, distinguishing the Cost of Wages, and Mining Industry from 1930.

Yorkshire.				rth Derbyshir Nottinghamsh		South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.			
Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-	Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	s. d. 9 2½ 9 0½ 8 10½ 8 6 8 3	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 13 5\frac{3}{4} 13 10 13 10 13 4 13 0\frac{1}{2}	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 15 1½ 15 11 15 9½ 15 2¼ 14 10½	
8 4 ¹ / ₄ 9 1 ¹ / ₂	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	11 10 12 5	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c} 9 & 2\frac{1}{2} \\ 10 & 1\frac{3}{4} \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	14 7 ³ / ₄ 16 2 ³ / ₄	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c cccc} 12 & 4\frac{1}{2} \\ 13 & 2\frac{3}{4} \\ 13 & 3\frac{1}{2} \\ 12 & 0\frac{1}{2} \end{array} $	13 9½ 13 3½ 13 2 13 6	8 6½ 8 8 8 7½ 8 3	$ \begin{array}{c cccc} 12 & 1\frac{3}{4} \\ 12 & 11 \\ 12 & 9 \\ 11 & 11 \end{array} $	$\begin{array}{cccc} 14 & 0\frac{1}{2} \\ 12 & 9\frac{3}{4} \\ 12 & 11\frac{1}{2} \\ 13 & 4 \end{array}$	$ \begin{array}{c cccc} 9 & 8\frac{1}{4} \\ 10 & 5\frac{1}{2} \\ 10 & 3\frac{3}{4} \\ 9 & 7 \end{array} $	$ \begin{array}{c cccc} 13 & 8 \\ 15 & 3 \\ 15 & 0\frac{1}{2} \\ 13 & 7 \end{array} $	15 7 ³ 14 8 14 10 15 4 ¹	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8 1 8 5 8 5 8 1	$ \begin{vmatrix} 11 & 6\frac{1}{4} \\ 12 & 6\frac{1}{2} \\ 12 & 4 \\ 11 & 9\frac{1}{2} \end{vmatrix} $	13 5 12 7 ³ / ₄ 12 9 ¹ / ₄ 13 2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c cccc} 12 & 9\frac{1}{4} \\ 14 & 1 \\ 14 & 4 \\ 13 & 4\frac{1}{2} \end{array} $	15 4 ³ 14 7 ¹ 14 4 ³ 14 11 ¹	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14 9½ 14 2 14 2½ 15 3	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{vmatrix} 11 & 10\frac{3}{4} \\ 13 & 1\frac{1}{4} \\ 12 & 7\frac{1}{2} \\ 12 & 2\frac{1}{2} \end{vmatrix} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c cccc} 9 & 7 \\ 10 & 6\frac{1}{2} \\ 10 & 6\frac{1}{2} \\ 10 & 1\frac{3}{4} \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	16 7 15 8 ¹ / ₄ 15 8 ³ / ₄ 16 8 ¹ / ₄	
Staffords	and, North W hire, Shropshi Dean, Somers	ire, Bristol,	Scotland.			Great Britain.			
Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro- ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-	
s. d. 10 5 10 64 10 3 9 93 9 93	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 14 11 ³ / ₂ 15 2 ¹ / ₂ 14 10 ¹ / ₄ 14 6 14 4 ¹ / ₂	s. d. 8 7½ 8 4 7 10¾ 7 8¼ 7 6½	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 12 9½ 12 3½ 11 5½ 11 5¾ 11 5¾ 11 8¾	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	s. d. 13 8 ³ / ₄ 13 8 ³ / ₄ 13 8 13 3 ³ / ₄ 12 11 ¹ / ₂	s. d. 14 1 14 0½ 13 10 13 6½ 13 4½	
$ \begin{array}{ccc} 9 & 9\frac{1}{2} \\ 0 & 5 \end{array} $	$14 5\frac{3}{4} \\ 15 0\frac{1}{2}$	14 7 15 9 ¹ / ₄	7 7 8 4 ³ / ₄	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 12 & 3\frac{1}{4} \\ 13 & 8\frac{3}{4} \end{array}$	$\begin{array}{ c c c c c } 8 & 6\frac{1}{2} \\ 9 & 2 \\ \end{array}$	12 11 ³ / ₄ 13 8	13 6 14 7½	
9 8 9 11½ 9 10½ 9 9½	$\begin{array}{ c c c c }\hline 14 & 2\frac{1}{4} \\ 14 & 9\frac{1}{2} \\ 14 & 6\frac{3}{4} \\ 14 & 3\frac{1}{2} \\ \hline \end{array}$	14 10 ³ 14 3 ¹ 14 1 ¹ 14 7 ¹	7 8½ 7 9¼ 7 10 7 5¾	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8 9 8 11 ³ / ₄ 8 11 8 6 ³ / ₄	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	13 11 13 43 13 31 13 63	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14 7 ¹ / ₄ 14 2 14 1 14 7 ¹ / ₄	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccc} 11 & 10 & \\ 11 & 5\frac{3}{4} & \\ 11 & 6\frac{1}{2} & \\ 12 & 0\frac{1}{2} & \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
9 8 9 11 9 11 ³ / ₂ 9 7 ¹ / ₂	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	14 7 ³ 14 4 ¹ 14 2 15 1 ¹	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c cccc} 11 & 3\frac{3}{4} \\ 11 & 4 \\ 11 & 7\frac{1}{4} \\ 11 & 3\frac{3}{4} \end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8 6 8 7½ 8 8¼ 8 4¾	$\begin{array}{c cccc} 12 & 9\frac{3}{4} \\ 13 & 2\frac{1}{4} \\ 13 & 3\frac{3}{4} \\ 12 & 7\frac{3}{4} \end{array}$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{vmatrix} 14 & 7\frac{1}{4} \\ 15 & 2 \\ 15 & 3\frac{1}{4} \\ 15 & 1\frac{1}{2} \end{vmatrix} $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c cccc} 12 & 0\frac{1}{4} \\ 12 & 3\frac{3}{4} \\ 12 & 6\frac{1}{2} \\ 12 & 5\frac{1}{2} \\ \end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{vmatrix} 13 & 2\frac{3}{4} \\ 13 & 11 \\ 13 & 11\frac{1}{2} \\ 13 & 7\frac{1}{2} \end{vmatrix} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

TABLE 26.—Output, Costs of Production, Proceeds and Profits

[The figures included in respect of South Wales and

Note.—The particulars are based partly upon the returns made for the purpose of wages Colliery Owners. The definition of the items of cost and proceeds is similar to that of in the item "Wages," and the "proceeds of miners' coal," so far as it is supplied at special The proceeds and the costs of raising ancillary minerals at coal mines are included.

		r endéd March.	Quarter ended 30th June.		
Percentage proportion of the Industry to which the particulars relate	Ś	% 17	% 97		
Output of Coal:— 1. Tonnage of saleable coal raised 2. Mine consumption 3. Miners' coal 4. Tonnage disposable commercially	To 58,55 2,97 1,18 54,39	ns. 56,760 75,755 81,729 99,276	Tons. 51,894,084 2,752,358 959,015 48,182,711		
	Amount.	Per ton disposable commercially.	Amount.	Per ton disposable commercially.	
Costs of Production:— 5. Wages 6. Stores and Timber 7. Other Costs (management, salaries, insurances, repairs, office	24,416,181 4,113,924	s. d. 8 11·72 1 6·15	22,350,958 3,856,647	s. d. 9 3·33 1 7·21	
and general expenses, depreciation, &c.)	6,312,520	2 3.85	6,282,962	2 7.30	
8. Miners' Welfare Fund Contributions	102,143	0 0 • 45†	88,067	0 0.44	
9. Royalties (including the rental value of freehold minerals where worked by the proprietor)	1,264,899	0 5.58	1,132,915	0 5.64	
10. Total Costs 11. Deduct proceeds of miners' coal	36,209,667 228,812	13 3·75 0 1·01	33,711,549 169,696	13 11·92 0 0·85	
12. Net Costs	35,980,855	13 2.74	33,541,853	13 11.07	
Proceeds:— 13. Commercial disposals	39,996,831	14 8.46	34,508,029	14 3.88	
Balance:— 14. Debits 15. Credits	4,015,976	1 5.72†	966,176	0 4.81†	
Numbers Employed, Shifts Worked, &c.:— 16. Number of workpeople employed 17. Number of man-shifts worked (including week-end and over-	72	25,132	. 716,795		
(including week-end and over- time shifts):— (a) At the coal face (b) Elsewhere below ground (c) On the surface (d) Total above and below	11,08	42,939 58,275 88,862	17,114,657 17,206,798 10,299,603		
ground 18. Number of man-shifts lost which could have been worked (including absences due to sick-	48,89	90,076	44,621,058		
ness or accident)	3,48	34,653	2,782,756		
19. Output per man-shift worked	cw 23	rts. •95	cwts. 23·26		
20. Earnings per man-shift worked		d.	s. d.		
(exclusive of allowances in kind) 21. Value of allowances in kind per	9 11		10 0.22		
man-shift worked	0 4	1 · 75	0 4.60		

^{*} Particulars for each of the principal Coal Districts will be found in the White Papers † Including certain adjustments arising from the Mining Industry (Welfare Fund) Act, has been reduced from a penny to a halfpenny per ton upon the output for the year 1932, indicated in item 15.

of the Coal Mining Industry during the Year 1936.*

Monmouthshire relate to the Year ended January, 1937.]

ascertainments for certain Districts, and partly upon other returns supplied by individual previous Summaries, i.e., subsistence allowances to low-paid day-wage workers are included prices, are treated as a reduction of the cost of producing the coal disposed of commercially.

Quarter 30th Sep	ended otember.		r ended cember.	Year 1936.			
9	/ ₆	ć	% 97	% 97			
2,71 89	ns. 8,338 1,733 3,706	2,95 1,16	ns. 11,702 57,341 61,425 22,936	Tons. 221,070,884 11,397,187 4,195,875 205,477,822			
Amount. Per ton disposable commercially.		Amount. Per ton disposable commercially.		Amount.	Per ton disposable commercially.		
£ 22,732,780 3,947,631	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	24,690,230 $4,428,184$	s. d. 9 1.69 1 7.67	$94,190,149\\16,346,386$	s. d. 9 2·01 1 7·09		
6,305,626	2 6.96	6,525,734	2 4.99	25,426,842	2 5.70		
109,048	0 0.54	120,815	0 0.54	420,073	0 0.49†		
1,169,877	0 5.74	1,268,580	0 5.63	4,836,271	0 5.65		
34,264,962 151,370	14 0·26 0 0·74	37,033,543 223,164	13 8·52 0 0·99	141,219,721 773,042	13 8·94 0 0·90		
34,113,592	13 11.52	36,810,379	13 7.53	140,446,679	13 8.04		
35,108,221	14 4.40	40,645,313	15 0.57	150,258,394	14 7.50		
994,629	0 4.88	3,834,934	1 5.04	9,811,715	0 11.46†		
71	1,134	71	18,531	717,898			
17,62	85,543 25,539 03,994	18,91	16,892 14,597 01,695	72,240,031 72,805,209 42,994,154			
45,39	95,076	48,93	33,184	187,839,394			
3,13	35,373	3,20	02,476	12,605,258			
cw 23 ·	ts.	cw 23	rts. ·76	cwts. 23·54			
s. 10 (d.)·19	s. 10	<i>d</i> . 1 ⋅ 10	s. d. 10 0 35			
0 4	1 · 42	0 4	1.80	0 4.65			

issued quarterly, viz., Cmd. 5198, 5278, 5340 and 5419 and for the year, viz., Cmd. 5427. 1934, under the provisions of which the contribution payable to the Miners' Welfare Fund and for subsequent years. To this extent, the actual balances are less favourable than as

TABLE 27.—Tonnage of Coal Produced, Shipped Abroad, and Available for Consumption in Great Britain in the Years 1913, 1920, and from

A.—General Distribution of the Coal available.											
	1913.	1920.	1931.	1932.	1933.	1934.	1935.	1936.			
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5	Million	Tons.						
Output of Coal in Great Britain	287.35	229 · 42	219:46	208.73	207-11	220.73	222.25	228 · 45			
Quantity Shipped Abroad :— Exports of Coal Coke	73.40	24.93	42.75	38.90	39·07 2·28	39.66	38·71 2·45	34·52 2·31			
Manufactured Fuel	2.05	2.26	0.76	0.76	0.80	0.73	0.71	0.51			
Coal Shipped for the use of Steamers engaged in the Foreign Trade Total Quantity of Coal Shipped	21.03	13.91	14.61	14.21	13.46	13.49	12.53	11.95			
Abroad*	98.34	43.68	61.65	57 · 15	56.68	57.09	55.54	50.34			
Coal, and the coal equivalent of coke and manufactured fuel imported and											
retained	0.02	‡ · · ·	0.02	0.03	0.04	0.05	0.06	0.18			
Quantity of Coal available for Home Consumption for all purposes†	183.85	180.72	155.68	149.50	148-37	161 · 48	164 · 47	175.90			
A STATE OF THE STA	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.			

^{*} Including the coal-equivalent of coke and manufactured fuel. In 1936, 67 tons of gas coke and 69 tons of other sorts of coke were obtained from every 100 tons of coal carbonised, and 94 tons of coal were used for every 100 tons of manufactured fuel made. See Tables 33, 34 and 35 and similar tables for previous years.

† These particulars relate to Great Britain only, the necessary adjustments having been made in respect of shipments to and from Ireland.

E	- Y	000	thar	5	000	tons.
E	, 1	7022	FYYCLI	LU,	000	tons.

‡ Less than 5,000 tons. B.—Consumption of Coal in Great Britain.								
	1913.	1920.	1931.	1932.	1933.	1934.	1935.	1936.
Consumer.	i. Quantity (Million Tons).							
1. Gas Works (excluding the coal equivalent of gas coke exported) 2. Electricity Generating Stations be-	16.7	16.88	16.69	16.37	16.16	16.66	16.73	17.76
longing to authorised under- takings and to railway and tram- way authorities	4.9	7.36	9.61	9.81	10.33	11.17	12.24	13.60
4. Vessels engaged in the Coastwise	13.2 .	13.42	12.27	11.70	11.67	12.17	12.29	12.75
Trade (bunkers) 5. Iron Works (used in Blast Furnaces)† 6. Other Iron Works and Steel Works†	1·9· 21·2 10·2	1·28 17·83 12·79	1·19 7·11 5·50	1·19 6·53 5·16	1·21 7·37 5·92	10·47 7·02	1·25 10·79 7·47	1·41 12·80* 8·25*
7. Collieries (engine fuel) 8. General Manufactures and all other purposes (including Domestic use):	(appx.) 18·0	17·20 93·96	12·61 90·70	12·04 86·70	11·59 84·12	11·68 91·05	11·61 92·09	11·75 · 97·58
Total	183.8	180.72	155.68	149.50	148.37	161 · 48	164 · 47	175.90
		acoust Constitution	ii. Perc	entage Pro	oportion c	f Total.		
Gas Works Generating Stations belonging to authorised undertakings and to railway and tram-	9.1	9.4	10.7	10.9	10-9	10.3	10.2	10.1
way authorities	2.7	4.1	6.2	6.6	7.0	6.9	7.4	7.7
4. Vessels engaged in the Coastwise Trade (bunkers)	1.0	7.4	7·9 0·8	0.8	7·8 0·8	7·5 0·8	7·5 0·8	7·2 0·8
5. Iron Works (used in Blast Furnaces)† 6. Other Iron Works and Steel Works†	11·5 5·5	9·8 7·1	4·5 3·5	4·4 3·4	5·0 4·0	6·5 4·3	6·6 4·5	7·3 4·7
7. Collieries (engine fuel) 8. General Manufactures and all other	(appx.) 9·8	9.5	8-1	8.1	7.8	7.2	7.1	6.7
purposes (including Domestic use)‡	53.2	52.0	58.3	58.0	56.7	56.5	55.9	55.5
Total	100.0	100.0	100.0	100.0	1 10 - 0	100.0	100.0	100.0

^{*} Provisional figure.

† These figures cover only the coal, or its equivalent in coke, used in the manufacture of products coming within the purview of the British Iron and Steel Federation by whom the figures were supplied.

‡ These residuary figures are subject to the changes in the stocks of coal held by producers and consumers, as to which information is not available generally. The same considerations apply to the total consumption figures. The consumption of coal for domestic purposes in private houses, public buildings and institutions, including coal for domestic industries and miners' coal, was estimated after the war at 40,000,000 tons a year. Information as to domestic coal consumption in more recent years is not available.

TABLE 28.—Quantity and Declared Value of Fuel Exported to each Principal Destination from, and Total Imported and Retained in, Great Britain,* and Quantity of Fuel Shipped for the use of Steamers, etc., engaged in the Foreign Trade (including Fishing Vessels), during the Year 1936.

	Co	al.	Gas C	Coke.	Other S Col		Manufa Fue	
Destination.	Quan- tity.	Value.	Quan- tity.	Value.	Quan- tity.	Value.	Quan- tity.	Value.
EXPO	RTED (Prod	luce of Grea	t Britain	and Nort	hern Ireland	1).	- 1	
rish Free State	Tons. 2,459,158 247,028 395,278 76,390	2,394,764 293,696 295,495 67,820	Tons. 3,879 627 20 302	4,424 399 24 331	Tons. 3,030 3,545 310 1,186	5,471 3,577 361 1,299	Tons. 219	£ 2 397 —
Palestine (including Trans- Jordan)	70,869 54,518	62,614 45,685	-		787 34	1,659	2,000	2,010
roons) Inglo-Egyptian Sudan Mauritius and Dependencies Aden and Dependencies British India	25,580 2,504 393 11,526 12,306	22,218 2,442 378 10,921 10,581	245 141 10	583 309 12	476 160 124 5 1,980	1,023 460 200 9 2,879	8,250 9,499	8,325 9,783
traits Settlements & Dependencies (including Labuan) leylon and Dependencies	7,718 21,256 6,126 1,284,940	7,388 19,317 6,005 1,668 667	100	165	4,308 90 735 5,018	6,131 136 952 5,879		
Newfoundland and Coast of Labrador	202,152 175,326 5,908 51,141	185,925 130,227 5,216 42,918	56 — — 76	90	112 314 403 12,484	397 494 523 16,396	10,183 600 5,274	9,411 630 5,281
Finland Stonia Latvia Lithuania Sweden Norway	1,062,671 55,041 450,132 205,798 2,692,804 1,326,518	760,239 45,166 338,892 157,001 1,954,204 951,679	5,557 — — 14,914 273,354	5,255 — — 10,658 312,475	164,455 503 18,088 8,557 115,814 146,089	175,793 616 19,864 9,742 115,934 138,377	101	
Denmark (including Faröe Islands) Coeland	3,330,294 108,439 3,045,954 1,310,070 523,606 7,146,424 874.638	2,399,516 97,447 2,242,264 1,055,166 372,246 6,693,019 641,952	545,825 8 1,249 332 —	617,211 14 1,439 339 —	590,992 1,719 168,697 37,364 544 7,356 570	611,420 2,217 177,388 41,644 1,006 9,763	120,404	114,533 46,346
Tunis French West and Equatorial Africa French Somaliland Syria Switzerland Portugal Azores Madeira	169,561 185,487 9,531 7,456 254,940 1,002,328 10,907 51,859	119,703 135,847 8,201 7,500 182,574 796,573 8,784 40,858	19,270	22,668	29 24 416 4,021 9,061 145 73	37 61 662 5,185 12,055 247 104	27,544 30,722 8,000 17,110 — — — — — 100	26,977 29,683 8,000 19,930 ————————————————————————————————————
Portuguese West Africa (excl. Angola)	59,680 7,384 731,603 127,744 64,924 60,214	45,509 6,313 683,237 106,816 47,964 41,457	1,334 100 24	1,533 131 30	19 40 30,684 113 —	42 88 37,254 150	10,633	10.48
Yugoslavia	310 120,772 4,828 5,327 1,257,471 42,225	281 107,071 4,786 6,164 1,049,708 29,988	17 - 50 31	23 — 112 38	10,828 424 ————————————————————————————————	11,660 587 ———————————————————————————————————	5,870 — — — — — — — 13,661	5,87
United States of America Brazil	133,630 631,826 286,333 1,965,069 85,469	217,788 561,074 239,676 1,800,962 69,337	1,194 2,170 419	1,558 2,705 585	50,547 5,425 9,713 16,191 7,265	54,626 7,385 12,819 26,445 9,600	62,975 101,068 31,367	51,80 82,20 29,39
Total to British Countries Total to Foreign Countries	5,110,117 29,409,267	5,272,277 24,026,962	5,456 865,848	6,487 976,774	35,101 1,407,610	47,925 1,486,225	36,026 478,619	35,83 439,07
Grand Total		29,299,239	871,304	983,261	1,442,711	1,534,150	514,645	474,91
SHIPPED FOR TI	HE UŠE OI	F STEAME (includin	RS, etc., g Fishing	ENGAGI Vessels).	ED IN THI	E FOREIG	N TRAD	E
Total Foreign Bunker Ship- ments	11,947,525	†	-	-	_	-	179	1 +
	1	MPORTED	AND R	ETAINE:	D.	1	1	
Total	26,060	32,119	25,386	31,300	75,857	88,227	173	10,36

Table 29.—Tonnage of Coal·Exported to the various Regions Steamers, etc., engaged in the Foreign Trade (including Ports of Great

			SHIPPED :	FROM EAST C	COAST OF
		Scotla	nd.	North 1	East.
Region to which Exported.	Year.	Tonnage.	Per- centage Pro- portion Shipped to each Region.	Tonnage.	Per- centage Pro- portion Shipped to each Region.
Baltic Sea; Soviet Union (Russia), Finland, Estonia, Latvia, Lithuania and Poland (including Dantzig), Sweden, Norway and Denmark (including Farce Islands).	1936 1935 1934 1933 1932	2,715,124 2,719,383 2,585,161 2,031,811 1,620,799	66·1 60·8 56·3 48·6 41·5	(a) To 4,736,959 4,242,342 4,249,041 3,542,846 2,560,761	nnage of 39.4 32.8 31.1 26.4 20.3
North Sea, English Channel and Irish Sea; Germany, Netherlands, Belgium, France, Switzerland, Channel Islands and Irish Free State.	1936 1935 1934 1933 1932	1,082,643 1,141,915 1,214,826 1,299,200 1,428,124	26·4 25·6 26·4 31·1 36·6	5,321,399 5,137,468 5,338,963 5,926,986 5,887,638	44·2 39·7 39·0 44·1 46·6
Western Mediterranean; Portugal, Spain, Italy, Malta, Gibraltar, Morocco, Spanish Ports in North Africa, Algeria, Tunis and Tripoli.	1936 1935 1934 1933 1932	70,493 280,270 343,232 369,308 377,010	1·7 6·3 7·5 8·8 9·7	1,095,108 2,627,304 3,276,957 3,100,329 3,327,039	9·1 20·3 24·0 23·1 26·4
Eastern Mediterranean; Austria, Hungary, Czecho- slovakia, Jugoslavia, Greece, Crete, Bulgaria, Rou- mania, European Turkey, Asiatic Turkey, Cyprus, Egypt and Anglo-Egyptian Sudan.	1936 1935 1934 1933 1932	3,900 14,676 32,902 28,990 34,448	0·1 0·3 0·7 0·7 0·9	288,832 365,200 339,496 348,817 288,679	2·4 2·8 2·5 2·6 2·3
West Coast of Africa, Azores, Madeira, Canary Islands and St. Helena.	1936 1935 1934 1933 1932	3,352 3,261 2,999 3,007 3,819	0·1 0·1 0·1 0·1 0·1	201,330 146,295 131,730 111,542 115,449	1·7 1·1 1·0 0·8 0·9
East Coast of Africa, Union of South Africa, Madagascar, Réunion, Mauritius and Dependencies, and Seychelles.	1936 1935 1934 1933 1932	=			=
Arabia, Indian Ocean and Continent, Malay Archi- pelago, Oceania and Further Asia.	1936 1935 1934 1933 1932			21,831 3,598 1,488 — 17,494	0·2 0·0 0·0 —
North and Central America	1936 1935 1934 1933 1932	207,479 256,958 364,552 363,873 389,900	5·1 5·7 7·9 8·7 10·0	281,348 314,046 269,270 323,787 361,762	2·3 2·4 2·0 2·4 2·9
South America and Other Regions†	1936 1935 1934 1933 1932	21,873 54,862 52,764 83,644 46,565	$0.5 \\ 1.2 \\ 1.1 \\ 2.0 \\ 1.2$	90,401 110,109 60,996 79,866 67,559	0·7 0·9 0·4 0·6 0·5
All Regions (Total Tonnage Exported and Percentage Proportion Shipped from each Group of Ports).	1936 1935 1934 1933 1932	4,104,864 4,471,325 4,596,436 4,179,833 3,902,665	11·9 11·5 11·6 10·7 10·0	12,037,208 12,946,362 13,667,941 13,434,173 12,626,381	34·9 33·4 34·5 34·4 32·5
Total Foreign Bunkers and Percentage Proportion shipped from each Group of Ports	1936 1935 1934 1933 1932		of Coal s 9 · 8 10 · 0 9 · 4 9 · 0 8 · 6	hipped for the 2,155,384 2,336,687 2,717,852 2,707,045 3,034,682	18·0 18·7 20·2 20·1 21·4

^{*} And Northern Ireland.
† Including Falkland Islands, Southern Whale Fisheries

of the World, and Tonnage of Coal shipped for the use of Fishing Vessels), from each of the Principal Groups of Britain, from 1932.

GREAT BR	ITAIN.	SHI	PPED FROM	w West Co	AST OF GR	EAT BRITAI	N.	from Great (includin	Britain'
Hum	ber.	Bristol C	hannel.	North '	West.	Scotla	and.	shipped fro other than specific	m Ports
Tonnage.	Per- centage Pro- portion Shipped to each Region.	Tonnage.	Per- centage Pro- portion Shipped to each Region.	Tonnage.	Per- centage Pro- portion Shipped to each Region.	Tonnage.	Per- centage Pro- portion Shipped to each Region.	Tonnage.	Per- centage Pro- portion Shippe to each Region
Coal Exp 1,073,735 958,676 1,090,579 857,308 720,641	orted. 35 · 9 29 · 2 33 · 2 26 · 4 21 · 6	288,111 220,457 238,280 239,860 167,957	2·2 1·4 1·5 1·5	2,076 21,443 6,042	0·3 4·7 1·0	167,128 195,020 208,717 88,281 59,391	14·5 14·9 15·8 7·9 4·7	9,123,586 8,480,374 8,574,686 6,886,186 5,267,972	26·4 21·9 21·6 17·6 13·5
1,339,621 1,516,426 1,336,537 1,461,880 1,653,907	44·9 46·2 40·7 44·9 49·6	5,678,627 5,407,659 5,428,891 5,799,559 6,144,355	43·1 34·6 34·1 36·1 37·2	759,204 705,211 370,180 517,071 753,045	96·8 96·4 81·9 86·5 94·6	700,288 568,234 379,115 428,926 634,892	60 · 6 43 · 6 28 · 8 38 · 4 50 · 6	14,987,180 14,614,567 14,265,795 15,691,862 16,802,509	43·4 37·7 36·0 40·2 43·2
56,603 62,433 105,634 156,082 137,953	1·9 1·9 3·2 4·8 4·1	2,132,296 4,266,531 4,851,701 4,568,748 4,740,679	16·2 27·3 30·5 28·5 28·7	4,071 12,158 6,595 2,846	0·6 2·7 1·1 0·4	51,662 258,319 473,428 407,773 350,903	4·5 19·8 35·9 36·6 27·9	3,417.161 7,505,548 9,086,050 8,645,811 8,969,008	9·9 19·4 22·9 22·1 23·1
38,817 87,245 88,900 105,467 165,559	1·3 2·7 2·7 3·3 5·0	1,070,886 1,607,395 1,256,973 1,100,442 1,168,724	8·1 10·3 7·9 6·8 7·1	16,983 13,509 26,063 50,420 25,483	2·2 1·8 5·8 8·4 3·2	24,337 18,402 23,294 6,810 8,074	2·1 1·4 1·8 0·6 0·6	1,469,947 2,161,038 1,791,198 1,646,401 1,690,967	4·3 5·6 4·5 4·2 4·3
24,589 20,946 11,995 16,268 14,650	0·8 0·7 0·4 0·5 0·4	297,793 383,977 294,540 373,007 373,962	2·3 2·5 1·8 2·3 2·3	5,474 4,249 4,483 3,468 6,383	0·7 0·6 1·0 0·6 0·8	1,191 513 — —	0·1 0·0 — —	533,830 559,272 445,783 507,323 514,349	1·6 1·4 1·1 1·3 1·3
		25,666 22,991 32,199 35,858 39,441	0·2 0·1 0·2 0·2 0·2					25,666 22,991 32,199 35,859 43,447	0·1 0·1 0·1 0·1 0·1
6,819 7,891 258	0·2 — 0·2 0·0	73,925 79,525 93,435 108,393 145,452	0·6 0·5 0·6 0·7 0·9	24 7 8,496 6,604 3,281	0·0 0·0 1·9 1·1 0·4	14,498 10,719 19,211 16,677 10,659	1.2 0.8 1.5 1.5 0.9	117,102 93,850 122,630 139,565 179,144	0·3 0·2 0·3 0·4 0·5
46,945 75,774 60,874 91,830 150,070	1·6 2·3 1·9 2·8 4·5	1,117,502 1,353,697 1,388,874 1,564,127 1,335,946	8·5 8·6 8·7 9·7 8·1	319 384 869 638 186	$\begin{array}{c} 0 \cdot 0 \\ 0 \cdot 0 \\ 0 \cdot 2 \\ 0 \cdot 1 \\ 0 \cdot 0 \end{array}$	184,276 234,764 193,131 160,801 140,090	15·9 18·0 14·7 14·4 11·2	1,838,459 2,235,898 2,279,552 2,505,856 2,378,017	5·3 5·8 5·8 6·4 6·1
400,681 558,216 586,612 557,474 492,539	13·4 17·0 17·9 17·1 14·8	2,478,507 2,293,481 2,333,047 2,274,172 2,387,213	18·8 14·7 14·7 14·2 14·5	2,497 2,271 8,097 7,097 3,036	0·3 0·3 1·8 1·2 0·4	12,494 19,042 20,471 6,808 48,874	1·1 1·5 1·5 0·6 3·9	3,036,453 3,040,566 3,061,987 3,009,063 3,053,388	8·7 7·9 7·7 7·7 7·9
2,987,810 3,279,716 3,281,131 3,254,200 3,335,577	8·7 8·5 8·3 8·3 8·6	13,163,313 15,635,713 15,917,940 16,064,166 16,503,729	38·1 40·4 40·1 41·1 42·4	784,501 731,778 451,789 597,935 795,486	2·3 1·9 1·1 1·5 2·1	1,155,874 1,305,013 1,317,367 1,116,076 1,255,662	3·3 3·4 3·3 2·9 3·2	34,519,384 38,714,104 39,659,880 39,067,926 38,898,801	100 · 0 100 · 0 100 · 0 100 · 0 100 · 0
Steamers, 2,478,396 2,689,975 2,738,115 2,841,270 2,722,890	&c., enge 20 · 7 21 · 5 20 · 3 21 · 1 19 · 2	ged in the 2 2,715,222 2,753,111 2,946,939 2,977,766 3,220,653	Foreign Tr 22 · 7 22 · 0 21 · 8 22 · 1 22 · 7		ng Fishing 13.9 13.5 14.3 13.9 14.1		8·0 7·8 7·9 7·8 7·7	11,947,525 12,526,170 13,487,222 13,457,081 14,209,237	100·0 100·0 100·0 100·0 100·0

TABLE 30.—Tonnage of Coal, Coke and Manufactured Fuel Exported from Note.—Owing to the territorial changes arising out of the Great War

		1000	1012	1	1	1	1	1	1	[
D4:4:			-1913.	1001	1000	1000	1004	1005	1000	1007
Destination.		Yearly Aver-	1913.	1921.	1922.	1923.	1924.	1925.	1926.	1927
		age.	1010.						}	
								A.—C	oal (Th	ousand
Europe and the Mediterr				1	!	[1	1	1	[
Russia and Succession St	ates	4,008 4,094	5,998	402	1,272	1,481	1,226	927	203 665	758
Sweden	• •	2,069	4,563 2,298	1,233 694		3,168 1,610	3,550 1,822			2,182 1,574
Denmark (inc. Faröe Isla	nds)	2,848	3,034	1,804	2,866		3,551	2,783	1,093	2,150
Germany		8,999	8,952	818	8,346	14,806		4,165	1,518	4,241
Netherlands Belgium	• •	2,162	2,018 2,031	1,788	6,068		2,744 3,330	1,527 2,486	621 831	2,315 $2,233$
France		10,647	12 776	6.396			14,535	10,235	3,792	9,262
Portugal		1,024	1,202	436	784	766	886	850	331	850
Spain		2,190 9,183	2,534 9,647	1,021 3,385	1,711 6,342	1,146	1,499 6,706	1,756	785	2,361 6,792
Italy Austria-Hungary		951	1,057	3,303	3		0,700	6,811	3,143	0,752
Greece		604	728	249	429	463	642		290	679
Algeria		1,055	1,282	455	1,032	1,060	1,244	1,120	524	1,462
Irish Free State Channel Islands	• •	169	168	114	161	1,485 164	2,472 177	2,244 193	1,034	2,408 215
Gibraltar		307	355	368	689	453	577	473	151	354
Malta and Gozo		492	700	206	214	298	333	225	85	244
Egypt (inc. Anglo-Egy Sudan)		2,872	3,162	1,025	1,762	1,707	1,813	1,980	1,029	2,200
Other European and Maranean Countries	editer-	861	888	639	720	688	805	899	373	928
Total		56,242	63,393	21,651	53,557	72,198	54,736	43,760	17,368	43,208
Africa and Asia.										
Canary Islands		930	1,115	160	525	611	687	486	232	532
Azores and Madeira		167	155	20	95	69	101	70	42	65
French West Africa Portuguese W. Africa & A	angodo.	111 278	149 233	49 107	119 194	144 242	113 241	90	53 91	131 331
Aden and Dependencies	ingoia	170	181	70	93		79	71	26	62
British India		217	179	532	999		101	94	15	56
Ceylon and Dependencie Straits Settlements and I	S	268	240	140	233	169	170	159	47	116
dencies (including Lab	uan)	25	30	43	75	20	45	56	5	85
Hong Kong		35	52	29	34	17	40		13	57
Other Countries	• •	394	426	205	294	282	242	285	87	258
Total	• •	2,595	2,760	1,355	2,661	1,703	1,819	1,547	611	1,693
South America.		001	F00	00	0.1	1	-	100		40
Chile Brazil		691 1,604	589 1,887	23 242	1,013	1,152	67 798	1,097	53 553	46 1,415
Uruguay		895	724	222	503	405	420	373	154	391
Argentine Republic		3,129	3,694	887	2,021	2,461	3,116	2,645	1,099	2,949
Other Countries	• •	71	65	51	70	126	92	98	57	181
Total	••	6,390	6,959	1,425	3,691	4,163	4,493	4,313	1,916	4,982
	nerica.				0.51	0.55	0.65		1.50	000
Canada Newfoundland and Coa	ast of	48	38	2	831	369	280	568	156	835
Labrador		37	56	9	82	50	17	64	1	43
United States of America		11	6	25	3,100	758	101	379	431	122
British West Indies Other Countries	• •	31 51	25 47	16 12	59 68	45 53	27 27	19 17	14 15	84 26
Total	••	178	172	64	4,140	1,275	452	1,047	617	1,110
Other Destinations	••	116		166	149	1,275	151	150	84	156
	••		72 400							
Grand Total	**	65,521	73,400	24,661	04,198	79,459	01,051	50,817	20,596	31,149

^{*} Up to 1st April, 1923, the figures cover exports from Great Britain and Ireland and shipments of coal, coke and manufactured fuel from Great Britain and Northern Ireland and shipments

Great Britain* to the Principal Destinations from 1909 to 1913 and from 1921.

comparisons between pre- and post-war figures are not in all cases exact.

1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	Destination.
Tons).	•						1		
538 1,540 1,117 1,731 5,368 2,430 2,259 9,065 962 1,867	2,336 1,444 2,194 5,521 3,123 4,140 13,045 1,050 1,783	547 1,767 1,202 1,921 4,926 2,860 3,445 12,969 1,136 1,712	1,024 1,310	946 1,365 867 2,090 2,308 1,770 1,591 8,886 906 1,079	1,984 983 2,857 2,360 1,587 1,431 8,696 992 1,077	2,610 1,371 3,088 2,541 1,617 972 7,669 1,028 1,341	2,527 1,311 3,175 2,885 1,508 631 7,130 1,039 1,243	2,693 1,327 3,330 3,046 1,310 524 7,146 1,002 732	Sweden. Norway. Denmark (inc. Faröe Islands). Germany. Netherlands, Belgium. France. Portugal. Spain.
6,622 11 637 1,737 2,423 192 373 160	7,095 4 589 1,808 2,456 209 348 185	7,167 530 1,435 2,469 238 210 103	5,908 	5,054 	132 1,013	4,699 7 179 1,060 1,040 232 458 71	16 186 1,018 2,068 266	121 875 2,459 247	Austria-Hungary Greece. Algeria. Irish Free State. Channel Islands. Gibraltar.
2,222 894	2,303 1,033	1,817 862	1,513 801	1,279 759	1,302 776	1,448 781	1,757 722		Other European and Mediter
42,148	51,378	47,316	37,313	32,731	32,870	33,718	32,761	28,998	
448 69 271 240 50 28 80	456 67 216 300 62 22 112	364 56 146 177 32 18 80	342 48 105 145 18 17 41	281 40 81 67 24 12 37	247 58 95 67 21 3 41	205 59 84 47 15 2 35	228 66 115 62 19 8 23	128 63 185 67 12 12 21	Azores and Madeira. French West Africa. Portuguese W. Africa & Angola Aden and Dependencies. British India.
59 24 273	91 6 374	30 6 304	23 19 165	37 17 130	47 6 94	45 4 95	24 4 117	8 6 127	dencies (inc. Labuan).
1,542	1,706	1,213	923	726	679	592	666	629	Total.
58 1,751 308 2,659 178	40 1,809 395 2,799 228	2 1,204 301 2,688 127	6 664 263 2,091 43	1 815 291 1,846 10	735 270 1,852 19	717 267 1,937 16	1 606 258 2,014 16	632 286 1,965 10	South America. Chile. Brazil. Uruguay. Argentine Republic. Other Countries.
4,954	5,271	4,322	3,067	2,963	2,876	2,937	2,895	2,893	Total.
629 45 374 94 16	745 23 335 46 23	975 48 393 31 15	906 68 301 58 27	1,615 137 234 187 205	1,722 171 242 190 181	1,747 157 166 153 57	1,668 177 187 161 43	1,285 202 134 175 43	North and Central America. Canada. Newfoundland and Coast of Labrador. United States of America. British West Indies.
1,158	1,172	1,462	1,360	2,378	2,506	2,280	2,236	1,839	Other Countries. Total.
249	740	561	87	101	137	133	156	160	Other Destinations.
50,051	60,267	54,874	42,750	38.899	39.068	39,660	38,714	34,519	

between Great Britain and Ireland are excluded. From 1st April, 1923, the figures cover shipments from these countries to the Irish Free State are included as exports.

TABLE 30.—

	1909-	1913.						1	
Destination.	Yearly Aver- age.	1913.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
							B.—Cok	e. (Th	ousan
Europe and the Mediterranean. Soviet Union (Russia) Sweden	56 198 140 187 23 14 10 28 115 55 18	96 257 158 229 20 11 6 30 101 70	10 153 112 302 1 3 4 6 38 31	20 469 269 716 241 160 54 — 69 102	10 531 265 682 1,210 292 298 13 52 85	47* 624 314 863 238 34 27 13 102 142	41 344 256 614 35 12 12 11 118 202	13 97 112 244 16 4 3 6 46 30 15†	29 225 286 670 43 10 4 13 156 105 23
Greece	19 20 25	20 30 24	6 1	12 8	15 3	22 13	26 1 4	12 6	23 — 4
America. United States of America Chile Brazil Uruguay Argentine Republic	17 16 11 12 22	9 12 14 8 25	6 1 7 2 10	63 39 8 — 14	42 23 13 3 17	47 22 21 5 23	115 25 21 5 22	71 5 9 2 10	22 9 16 6 23
Other Destinations	100	110	37	270	409‡	244‡	248‡	60	135
Grand Total Gas Other Sorts	}1086	1,235	443 293	911 1,603	1,224 2,746	964 1,848	889 1,223	387 377	995 807
						C	.—Man	ufacture	d Fue
Europe and the Mediterranean. France	192 161 232 21 37	252 189 249 17 32	170 71 63 28	239 104 143 15	326 70 117 10 3	167 67 174 20	180 62 145 42	51 28 70 12 3	265 55 151 67
Egypt (inc. Anglo-Egyptian Sudan)	42 48 164 6	77 69 215 15	37 19 129 26	46 40 190 51	26 39 174 38	54 39 207 47	35 31 153 48	12 14 76 29	12 27 179 46
Morocco			1						12
America. Venezuela Chile Brazil Argentine Republic	11 138 187 31	11 155 224 80	10 40 6	17 91 13	10 60	8 113 4	33 199 28	10 92 27	36 225 129
America. Venezuela Chile Brazil	138 187	155 224	40	91		113	199	92	36 225

^{*} In 1924 and subsequent years the particulars relate to Finland except those for 1925 and 1926 and are included. † In 1926 and subsequent years the particulars relate to Yugoslavia. ‡ Including 1924) and 79,000 (in 1925).

continued.

1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	Destination.
Tons.)	1	1	,	,	1	1			
102 467 349 821 158 17 5 18 146 131 49 29 6	56 523 381 903 212 13 30 22 200 194 49 29 5	74 439 326 743 166 12 41 22 173 125 41 34 5	50 445 378 814 236 16 14 20 69 127 47 25	50 312 355 817 103 32 9 25 48 181 21 31	56 276 402 775 91 83 5 28 52 167 64 16 3	57 194 356 832 115 70 18 32 50 105 92 9 2	151 208 422 987 198 46 12 35 55 30 77 7	170 131 419 1,137 170 38 7 28 32 — 11 —	Europe and the Mediterranean. Finland.* Sweden. Norway. Denmark (inc. Faröe Islands) Germany. Netherlands. France. Portugal. Spain. Italy. Yugoslavia.† Greece. Roumania. Egypt (inc. Anglo-Egyptian Sudan).
50 8 27 7 25	36 11 36 10 25	40 8 13 12 19	39 - 8 10 21	67 	98 1 17 10 11	96 1 13 10 15	71 3 8 8 8	51 1 5 11 18	America. United States of America. Chile. Brazil. Uruguay. Argentine Republic.
174									
174	165	165	73	139	126	123	111	83	Other Destinations.
996 1,598	1,243 1,661	916 1,547	977 1,421	139 865 1,367	126 803 1,482	123 814 1,379	865 1,584	83 871 <i>§</i> 1,443 <i>§</i>	Gas. Other Sorts. Grand Total.
996 1,598	1,243	916 1,547	977	865	803	814	865	871 (Gas. Crand Total
996 1,598	1,243 1,661	916 1,547	977	865	803	814	865	871 (Gas. Other Sorts. Grand Total. Europe and the Mediterranean. France. Spain. Italy. Greece.
996 1,598 (Thous	1,243 1,661 and Tor	916 1,547 as.) 173 20 144 41	977 1,421 104 14 141	96 15 134	803 1,482 82 18 130	814 1,379	865 1,584 107 20 64	871 { 1,443 { 120 11 -	Gas. Other Sorts. Grand Total. Europe and the Mediterranean. France. Spain. Italy. Greece. Turkey.
996 1,598 (Thous 101 41 145 34 2 13 20 151	1,243 1,661 and Tor 149 22 155 41 — 16 29 172	916 1,547 ns.) 173 20 144 41 1 9 34 138	977 1,421 104 14 141 31 - 7 32 62	96 15 134 21 - 6 28 55	803 1,482 82 18 130 4 - 4 31 72	111 21 131 3 - 14 18 75	107 20 64 2 - 19 28 79	871 { 1,443 { 120 11 - 6 - 8 28 49 }	Gas. Other Sorts. Grand Total. Europe and the Mediterranean. France. Spain. Italy. Greece. Turkey. Egypt (inc. Anglo-Egyptian Sudan). Tunis. Algeria.
996 1,598 (Thous 101 41 145 34 2 2 13 20 151 23	1,243 1,661 and Tor 149 22 155 41 — 16 29 172 42 25 12 221	916 1,547 ns.) 173 20 144 41 1 1 9 34 138 31	977 1,421 104 14 141 31 - 7 32 62 28 12 -75	96 15 134 21 6 28 55 27	803 1,482 82 18 130 4 	814 1,379 111 21 131 3 — 14 18 75 18	107 20 64 2 	871 { 1,443 } 120	Gas. Other Sorts. Grand Total. Europe and the Mediterranean. France. Spain. Italy. Greece. Turkey. Egypt (inc. Anglo-Egyptian Sudan). Tunis. Algeria. Morocco. America. Venezuela. Chile. Brazil.

when 4,000 tons and 8,000 tons of coke, respectively, were exported to the Soviet Union (Russia) the following tonnages exported to Belgium in the years specified: 261,000 (in 1923); 65,000 (in

Table 31.—Quantity and Declared Value (f.o.b.) of Coal Exported from Great Britain and Northern Ireland during the Year 1936, distinguishing the Kind and Quality of the Coal Exported.

				Qua	ality of Coal	•	
Kind of	Coal.		Small.	Sized.	Through and Through.	Large.	Total.
Anthracite Steam Gas Household Other Sorts Total	• • • • • • • • • • • • • • • • • • • •		Tons. 496,967 3,044,181 172,487 31 791,236 4,504,902	Tons. 2,056,013 8,176,531 877,506 328,160 242,755 11,680,965	Tons. 3,500,045 1,801,457 730 1,394,841 6,697,073	Tons. 768,279 9,554,885 142,267 1,164,434 6,579	Tons. 3,321,259 24,275,642 2,993,717 1,493,355 2,435,411 34,519,384
				Percen	tage Propor	tion.	1
Anthracite Steam Gas Household Other Sorts Total	•••		% 1·4 8·8 0·5 0·0 2·3	% 6·0 23·7 2·6 0·9 0·7	$0.0 \\ 0.0 \\ 10.1 \\ 5.2 \\ 0.0 \\ 4.1 \\ \hline 19.4$	$ \begin{array}{c} \% \\ 2 \cdot 2 \\ 27 \cdot 7 \\ 0 \cdot 4 \\ 3 \cdot 4 \\ 0 \cdot 0 \end{array} $	% 9·6 70·3 8·7 4·3 7·1
				Val	ue f.o.b.		1
Anthracite Steam Gas Household Other Sorts Total		• • • • • • • • • • • • • • • • • • • •	202,833 1,804,723 108,481 14 503,825 2,619,876	3,289,794 6,403,843 677,241 313,629 182,779 10,867,286	2,641,489 1,287,276 630 943,933 4,873,328	1,318,680 8,274,698 113,755 1,225,934 5,682	4,811,307 19,124,753 2,186,753 1,540,207 1,636,219 29,299,239
				Average V	Value per to	n, f.o.b.	
Anthracite Steam Gas Household Other Sorts			s. d. 8 2 11 10 12 7 * 12 9	s. d. 32 0 15 8 15 5 19 1 15 1	s. d. 15 1 14 3, * 13 6	s. d. 34 4 17 4 16 0 21 1 17 3	s. d. 29 0 15 9 14 7 20 8 13 5
Total	••	• •	11 8	18 7	14 7	18 10	17 0

^{*} Less than 1,000 tons exported.

(a) Tonnage of Coal Shipped Coastwise and for the use of Vessels engaged in Coastwise Trade, from each of the Principal Groups of Ports of Great Britain and Northern Ireland. TABLE 32.—Coal, Coke and Patent Fuel Transported by Sea, Rail and Canal, etc., from 1927.

Great Britain and Northern Ireland	(including shipments from Ports other	specified).		16,338,103 17,196,109 18,947,454 18,419,564	18,381,217 18,915,908 19,496,673 21,352,267 21,961,360		1,368,042 1,403,986 1,550,728 1,450,198	1,339,115 1,335,294 1,347,664 1,402,438 1,397,256 1,409,016
	nď.	Percent- age of Total.		0%40	7000077 0000000		14.6 14.8 13.8 13.4	13.8 13.8 13.5 13.6 14.2
t Britain.	Scotland	Tonnage		1,244,532 1,244,532 1,397,625 1,393,490	1,457,208 1,618,589 1,710,350 1,748,603 1,739,431		201,043 200,742 214,208 194,665	186,614 184,477 176,892 189,288 190,014 200,347
st of Great	Test.	Percent- age of Total.		4.9 6.0 6.0 6.0	ららなまする		21.0 20.0 19.7 19.7	19.3 17.9 18.7 18.4
Shipped from West Coast of Great Britain.	North West.	Tonnage.		1,049,857 1,047,932 1,129,750 1,108,205	1,010,122 949,082 917,050 1,007,950 1,028,706	101676	287,204 280,807 306,261 277,498	259,052 246,669 241,854 262,442 256,802 248,218
shipped fro	annel.	Percent- age of Total.	ents.	10.00 8 20.00 8 17.00 7.1	****************		9.5	10.2 10.4 10.7 10.7 10.7
C	Bristol Channel.	Tonnage.	Cargo Shipments.	1,655,643 1,668,579 1,735,554 1,608,235	1,447,204 1,366,147 1,310,865 1,559,359 1,844,796	(b) Bunker Coal	132,589 133,825 149,186 147,431	136,179 130,038 140,507 149,736 149,556 143,803
	er.	Percent- age of Total.	(a) (0,000,00	, 00000 100000 100000	1	9.7.4.0 9.4.0.0	000440 004000
Britain.	Humber.	Tonnage.		1,286,516 1,161,457 992,657 1,091,988	1,305,357 1,297,214 1,262,213 1,240,425 1,171,026	1,203,101	66,511 75,447 69,482 72,679	71,396 71,245 72,495 68,575 66,885
t of Great	ist.	Percent- age of Total.		54.4 57.4 60.0 58.6	57.20	0.70	24.3 24.8 26.0 27.6	72.22 22.83.27 7.7.47.4.0.18
Shipped from East Coast of Great Britain.	North East.	Tonnage.		8,889,340 9,864,248 11,373,555 10,801,049	10,763,666 10,817,548 11,297,487 12,653,121 13,412,587	14,07,629,14	333,100 348,727 403,681 400,321	370,671 370,251 382,526 402,471 411,029 437,044
Shipped fr	į.	Percent- age of Total.		11.6 12.5 11.9	48.34	10.21	17.2 17.8 17.8 16.4	16.0 17.4 16.9 16.3
0,	Scotland	Tonnage.		1,901,879 2,151,088 2,260,909 2,336,834	2,280,647 2,702,418 2,835,852 2,983,126 2,609,046		235,663 249,425 276,708 237,237	213,811 231,863 234,111 237,611 223,525 229,890
				::::	:::::	:	::::	::::::
	Vear.			::::	:::::	:	::::	:::::
	A			::::	:::::	:	::::	::::::
			-	1927 1928 1929 1930		1936	1927 1928 1929 1930	1931 1932 1934 1935

(b) Tonnage of Coal, Coke and Patent Fuel Carried on British Railways, and Canals, Waterways, etc.

Rail:* Tons. Tons. Tons. Tons. Tons. Freight Traffic 195,769,982 187,928,581 207,130,109 195,288, Free-hauled Traffic Free-hauled Traffic 16,076,650 14,381,192 14,262,362 13,788, Total 207,076, 706 201,709,773 221,382,471 207,076, Total	_	1931.	1932.	1933.	1934.	1935.	1930.
ght Traffic 195,769,382 187,328,581 207,130,109 -hauled Traffic 16,070,650 14,381,192 14,262,362 Trotal 211,846,932 201,709,773 221,392,471	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
211.846.032 201.709.773 221.392.471	193,288,726 13,788,021	173,680,226	167,193,574 12,206,372	165,451,965	173,988,041 12,664,046	174,817,181	177,514,747
	207,076,747	186,537,165	179,399,946	177,483,177	186,652,087	187,512,932	190,519,425
Canals, Waterways, etc.† 7,066,400 6,744,058 6,751,344 6,269,	6,269,381	5,618,663	5,428,569	5,391,499	5,611,787	5,686,071	5,860,475

Excluding Manchester Ship Canal.
 Excluding Manchester Ship Canal and Lea and Stort Navigations.

Table 33.—Tonnage of Coal Carbonised at Coke Ovens, and of Coke, Breeze and Gas obtained therefrom, and Number and Kind of Coke Ovens in use in Great Britain during the Year 1936.

Note.—Particulars in respect of ovens situated at Gas Works are excluded from this Table but included in Table 34.

(a) All Types of Ovens.

	Ouantity	Outp	ut of		age Mon of Oven		
District.	of Coal Carbonised.			Non-re	ecovery	By-	
	Carbonisca.	Coke.	Breeze.	Bee- hive.	Other kinds.	Pro- duct.	Total.
N. A. F. A. C. A. C. A. B. D. L 1 N. A.	Tons.	Tons.	Tons.				
North East Coast (including Durham and North Riding of Yorkshire) Cumberland Lancashire and North Wales Yorkshire, Lincolnshire, Derbyshire, Northamp-	7,037,709 501,082 676,172	5,073,400 337,054 510,634	18,925	278 - 21	_	2,275 224 145	2,553 224 166
tonshire, Nottinghamshire and Essex	8,213,394	5,210,478		257		2,197	2,454
Staffordshire South Wales and Monmouthshire	498,247 2,246,562	328,316 1,660,249	107,118	76	102	197 810	197 988
Scotland	886,500	631,339	32,148	47		415	462
Great Britain	20,059,666	13,751,470	1,068,444	679	102*	6,263	7,044
Corresponding figures for 1935	17,436,674	11,939,453	815,752	592	113*	6,196	6,901

^{*} Coppée (non-recovery) ovens.

(b) By-Product Ovens.—(i) Coke and Breeze Production.

D	Quantity	Outp	out of
District.	of Coal Carbonised.	Coke.	Breeze.
	Tons.	Tons.	Tons.
North East Coast (including Durham and North Riding Yorkshire) Cumberland Lancashire and North Wales	6,866,410 501,082	4,962,728 337,054	173,222 18,925
Yorkshire, Lincolnshire, Derbyshire, Northamptonsh Nottinghamshire and Essex	8,088,404	503,540 5,139,837 328,316	16,184 645,751 73,011
South Wales and Monmouthshire	2,157,007	1,600,867 614,626	107,033 31,040
Waste Heat Ovens	4,789,047 14,848,230	3,259,058 10,227,910	264,055 801,111
Total	19,637,277	13,486,968	1,065,166
Corresponding figures for 1935	17,071,971	11,715,644	811,458

Note.—The average monthly number of ovens in use in 1936 included 1,419 Otto-Hilgenstock, 1,245 Koppers, 1,155 Simon Carvés, 474 Coppée, 427 Semet-Solvay, 413 Simplex, 387 Becker, 251 Carl Still, 153 Huessener, 133 Wilputte, 106 Kogag, 25 Collin, 24 Piette, 6 Cleveland and 45 other kinds.

Of the total number 2,254 were waste heat ovens and 4,009 were regenerative ovens.

(b) By-Product Ovens.—(ii) Gas: Production and Disposal.

		Produ	ction and Disp	posal of Over	Gas.	
			Coke Oven	So	ld.	
District.	Total Production.	For Heating Ovens.	For all other purposes including supplies to Owners' Collieries, Works, &c.	To Gas Under- takings.	To other independent Undertakings.	Balance.
North East Coast (including Durham	== 010 = 1	40,000,0	Million Cubic		4 4 4 5 7 9	1 400 1
and North Riding of Yorkshire)	75,618·5 5.472·5	46,699·0 2.762·3	17,939 • 6	5,400.5	4,171.3	1,408·1 910·4
Lancashire and North Wales	7,330.9	3.973 · 1	1,724.7	1,212.7	122.0	298 · 4
Yorkshire, Lincolnshire, Derbyshire, Northamptonshire, Nottinghamshire	.,000	0,070 2	-,,	-,		
and Essex	89,695.9	46,975.6	20,727 · 7	15,535.8	3,311 · 1	3,145.7
Staffordshire	5,401.8	3,275 · 4	1,152.2	974.2		
South Wales and Monmouthshire	21,163 · 4	10,233 · 3	8,712.9	713 · 1	1,021 · 4	482.7
Scotland	9,350.3	7,008.3	360.0	`695 · 0	-	1,287.0
Great Britain	214,033 · 3	120,927 · 0	52,369 · 7	24,531.3	8,673.0	7,532 · 3
Corresponding figures for 1935	185.558 · 3	110,235.7	43,731.2	20,474 · 1	6,326 · 6	4,790 - 7

TABLE 34.—Quantity of Coal used in the Manufacture of Gas, Quantity of Coke (including Breeze) made, and Quantity and Value at Works of the Coke (including Breeze) sold in Great Britain during the Year 1936. (Provisional).

District.	Quantity of Coal used in the Manufac- ture of Gas.	Quantity of Coke and Breeze made.	Quantity of Coke and Breeze sold.	Value a Works of Coke and Breeze sold.
England	Tons. 16,839,080 424,845 1,767,124 25,421	Tons. 11,371,261 275,359 1,069,072 18,826	Tons. 7,536,726 153,535 714,418 12,470	8,833,826 170,405 606,043 15,050
Great Britain and the Isle of Man	19,056,470	12,734,518	8,417,149	9,625,324
Corresponding figures for 1935*	18,033,192	11,983,114	8,039,901	8,344,749

^{*} Revised figures.

NOTES.—1. Particulars of coal carbonised at coke ovens situated at Gas Works are included.

2. The sales in 1936 included 6,131,097 tons of coke and 438,099 tons of breeze, the value of which, at works, was £7,488,687 and £153,771, respectively. Separate particulars of the quantity and value of coke and breeze making up the balance of sales were not supplied. The bulk of the coke and breeze not sold is used at the gas works for heating retorts in the production of coal gas, in the production of water and producer gas, and for driving engines, etc.

Table 35.—Quantity and Kind of Coal used in the Manufacture of Briquettes or Manufactured Fuel, and Quantity and Value of Briquettes produced therefrom at Works in Great Britain during the Year 1936.

District.	Manuf	ettes or actured made.			used in t or Manuf		ufacture Fuel.
	Quan- tity.	Value atWorks.	Steam.	House- hold.	Anthra- cite.	Other sorts.	Total.
England Wales and Monmouthshire	Tons. 54,904 612,893	73,607 515,311	Tons. 17,381 496,925	Tons. 34,328	Tons. 1,088 265	Tons. —	Tons. 52,797 571,996
Scotland	45,981	64,564	364	41,590	910	gramminosis	42,864
Great Britain	713,778	653,482	514,670	75,918	2,263	74,806	667,657
Corresponding figures for 1935	857,031	775,707	679,704	65,040	944	57,342	803,030

TABLE 36.—Quantity of Barytes (excluding Witherite) Raised in Great Britain, Imported and Retained, Exported, and Available for Consumption at Home from 1922.

	Ye	ar.	Production.	Imports Retained.*	Total.	Exports (Home Produce).*	Available for Consumption at Home.
			Tons.	Tons.	Tons.	Tons.	Tons.
1922			 31,728	34,245	65,973	4,410	61,563†
1923			 29,607	37,063	66,670	5,254	61,416†
1924			 43,097	39,037	82,134	5,515	76,619
1925			 40,901	44,868	85,769	5,012	80,757
1926	• •	• •	 35,237	38,868	74,105	4,179	69,926
1927			 40,160	34,774	74,934	655	74,279
1928			 41,857	36,511	78,368	4,718	73,650
1929			 47,938	46,626	94,564	2,202	92,362
1930			 50,610	47,257	97,867	1,449	96,418
1931			 38,224	31,041	69,265	1,862	67,403
1932			 50,381	23,588	73,969	2,156	71.813
1933			 61,509	33,143	94,652	1,561	93,091
1934			 63,582	35,699	99,281	2,389	96,892
1935			68,723	45,156	113,879	3,135	110,744
1936			 64,319	52,806	117,125	4,161	112,964

TABLE 37.—Quantity of Iron Ore and Ironstone Raised in Great Britain,* Imported and Retained, and Available for Consumption at Home from 1913.

				onstone Rais	ed.			
Year.	West Coast Hematite (Non-	Jura	ssic.	From Coal	Other Occur-	Total.	Iron Ore Imported and Retained.	Iron Ore and Ironstone Available for Con-
	Phos- phoric).	Cleveland.	Other Sorts.	Measures.	rences.			sumption.
1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1924 1925 1926 1927 1928 1929 1929 1929 1930 1930 1932	Tons. 1,767,088 1,630,882 1,656,494 1,608,353 1,559,324 1,515,901 1,213,677 1,257,388 335,649 839,801 1,190,036 1,051,283 951,873 497,123 1,240,990 1,172,428 1,391,756 1,134,088 709,143	Tons. Tons. 6,010,800 6,555,484 1,5,653,837 6,038,508 1,4,797,094 6,498,697 1,4333,273 6,271,123 1,4,832,148 7,034,937 1,7,034		Tons. 1,542,053 1,419,691 1,1123,650 1,116,392 1,219,753 1,121,175 1,041,231 950,004 229,515 273,152 548,794 499,738 343,021 122,451 297,707 369,651 417,041 350,603 72,657	Tous. 115,919 113,657 1139,591 144,291 165,072 132,384 102,826 85,798 44,214 73,728 91,672 92,547 99,717 33,960 125,005 180,054 208,141 139,448 17,046 61,454	Tons, 15,991,344 14,856,375 14,215,526 13,473,440 14,821,264 14,895,417 12,239,993 12,677,670 3,470,516 6,836,507 10,875,211 11,050,589 10,142,878 4,094,386 11,206,601 11,262,323 13,214,943 11,627,233 13,214,943 11,627,233 17,625,860 7,328,190	Tons. 7,441,063 5,697,054 6,197,140 6,933,754 6,189,655 6,581,728 5,200,746 6,499,551 1,887,642 3,472,575 5,860,467 5,927,359 4,381,896 2,087,725 5,163,489 4,439,866 5,689,342 4,137,899 2,118,716	Tons, 24,013,498 21,142,262 21,088,597 21,118,591 21,650,933 21,804,512 17,696,668 19,648,049 5,572,922 10,602,667 16,985,710 17,235,282 414,728,684 6,350,030 16,577,846 15,914,015 19,148,705 16,008,825 9,944,287 9,346,714
1933 1934 1935 1936	632,894 813,199 839,915 879,907	1,012,753 5,614,976 1,641,921 7,840,703 1,640,093 8,102,195		94,691 142,963 167,072 174,165	106,406 148,060 146,110 229,938	7,461,720 10,586,846 10,895,385 12,701,386	2,706,996 4,358,979 4,546,937 5,960,385	10,389,541 15,193,740 15,670,923 18,891,928

^{*} Including imports into, and exports from, Northern Ireland. For the years 1922 to 1926 the imports and exports of Blanc Fixé are also included as separate particulars are not available. In 1927 the imports and exports of the latter were 2,590 tons and 265 tons, respectively.

† Exclusive of barytes produced in the Irish Free State during 1922 and the first 3 months of 1923, the bulk of which was probably consumed in Great Britain. In 1921, 4,600 tons of barytes were obtained in the counties of Cork and Sligo.

^{*} Including particulars for Ireland up to the year 1921.

† Not including iron ore raised in Wiltshire, which is used for other purposes than iron-making.

‡ Including "Purple Ore," or residue of cupreous iron pyrites, imported. Allowance has also been made for British iron ore exported.

NOTE.—The average percentage of metal in the mineral varies in the case of British iron ore and ironstone from about 20 to 55 per cent. and averaged 30 per cent. of the clean raw mineral. Imported ore is mainly hematite and contains more than 50 per cent. of iron. In 1936 the quantity of iron contained in the British iron ore and ironstone raised was 3,810,000 tons. Together with the metal equivalent of the iron ore imported, the residue of cupreous iron pyrites imported, and allowing for a small quantity of British iron ore exported, the quantity of iron contained in the iron ore and ironstone available for committee on thome is estimated at nearly 7 million tons, approximately. In the production of pig iron, cinder, scale and scrap are used in addition to iron ore.

Table 38.—Quantity and Average Net Selling Value of Limestone, Igneous Rocks, Sandstone and Gravel and Sand obtained in 1936 and 1935, distinguishing the Principal Purposes for which they were used.

	1					
		1936.			1935.	
Purpose for which used.	Quant	ity.		Quant	ity.	A
	Tons.	Per- cent- age of Total.	Average Value per ton.	Tons.	Per- cent- age of Total.	Average Value per ton.
		(a) Lime	estone (inc	luding Dolon	nite).	
Lime and cement making	4,950,000 42,000 535,000 194,000 6,918,000 2,447,000 615,000 1,013,000 107,000 202,000	% 29·1 0·2 3·1 1·1 40·6 14·4 3·6 6·0 0·6 1·2	s. d. 2 11 4 0 3 3 25 8 19 7 4 4 3 0 3 3 4 0 5 3 6 8	4,434,000 40,000 576,000 178,000 †12,000 †6,306,000 2,171,000 546,000 1,020,000 77,000 174,000	28·5 0·3 3·7 1·1 9·1 40·6 14·0 3·5 6·6 0·5 1·1	s, d. 2 11 4 4 3 1 26 7 †18 9 4 3 3 2 3 3 4 0 5 2 6 2
All Purposes	17,035,000	100.0	3 11	15,534,000	100.0	3 11
			(b) Igneo	as Rocks.		
Building stone (including monumental stone) Artificial stone Concreting* Roadmaking and ballasting Kerbs and setts Other uses and mineral not classified	76,000 264,000 166,000 9,211,000 180,000 34,000	% 0.8 2.7 1.7 92.7 1.8 0.3	s. d. 35 3 5 0 5 1 5 4 33 1 3 11	80,000 229,000 164,000 8,522,000 168,000 35,000	% 0.9 2.5 1.8 92.6 1.8 0.4	s. d. 32 4 4 7 4 6 5 4 33 0 3 11
All Purposes	9,931,000	100.0	6 1	9,198,000	100.0	6 0
			(c) Sar	dstone.		
Building stone (including monumental stone) Artificial stone Concreting* Roadmaking and ballasting Kerbs, setts, flagstones, etc. As a refractory material (Ganister, Silica Stone and Silica Sand)	421,000 65,000 552,000 2,301,000 203,000 638,000	9.8 1.5 12.9 53.8 4.7	s. d. 24 5 4 2 4 3 4 2 26 8	370,000 54,000 500,000 2,177,000 187,000	9·3 1·4 12·6 54·7 4·7	s. d. 24 11 4 3 4 2 4 3 26 4 7 5
Grindstones, pulpstones, scythestones, etc. Other uses and mineral not classified	12,000 91,000	0.3	59 10 9 6	12,000 100,000	0·3 2·5	60 10 9 6
All Purposes	4,283,000	100.0	7 11	3,976,000	100.0	B 0
			(d) Gravel	and Sand.		
Building (including brickmaking) Artificial stone Cementing and Concreting* Roadmaking and ballasting Moulding and pig-bed sand Glassmaking Other uses and mineral not classified	13,534,000 259,000 562,000 3,441,000 802,000 129,000 64,000	72·0 1·4 3·0 18·3 4·3 0·7 0·3	s. d. 2 7 2 10 3 2 3 2 3 4 4 0 4 8	11,662,000 92,000 464,000 2,461,000 695,000 134,000 44,000	75·0 0·6 3·0 15·8 4·5 0·8 0·3	s. d. 2 7 3 0 3 4 3 3 3 5 3 10 4 6
All Purposes	18,791,000	100.0	2 9	15,552,000	100.0	2 9

^{*} Including mineral disposed of for cementing and concreting when the ultimate use was unknown. Broken stone, etc., used for concreting in building and constructional operations (other than roadmaking) is also included.

[†] Revised figures.

11

TABLE 39.—Quantity and Declared Value of the Principal Minerals and Manufactures thereof (other than Coal) Imported and Retained in, and Exported from, Great Britain* during the Year 1936.

	Qua	ntity.	Va	lue.
Kind of Mineral or Manufacture.	Imported and Retained.	Exported.	Imported and Retained.	Exported †
(i) Metalliferous Ores and M	anufactures	thereof.		
Iron and Steel.— Iron Ore:	Tons.	Tons.	£	£
Mauganiferous Other Sorts (except Chrome Iron Ore and Pyrites) Iron and Steel, Scrap and Waste, fit only for the	41,283 5,199,102	61 3,096	72,048 5,217,160	424 9,918
Iron and Steel and Manufactures thereof (Total)	1,087,566 1,475,391 240,344	139,280 2,203,061	3,068,224 11,474,961 694,328	380,853 35,966,688
Chromium ore (Chromite or Chrome Iron Ore)	40,907	‡	128,144	‡
Aluminium,— Bauxite	231,444	‡	323,111	*
Copper Ore (including Regulus and Matte) and Precipitate and Cement Copper	31,209	470	731,046	11,594
of metal	1,804 249,228 50	14,583 36,214 26,486	59,489 10,448,522 784	509,883 1,893,428 380,050
Lead.— (Including Cupreous Pyrites)	311,085	240	361,347	128
Lead Ore and Concentrates Lead Manufactures (including Pig Lead) Red Lead and Orange Lead	34 335,220 1,918	26,139 10,145 5,470	5,960,268 42,200	237,327 254,712 146,387
White Lead (Basic Carbonate) dry	4,208	1,652	110,964	57,983
Tin Ores and Concentrates Tin Manufactures (including Soft Solder and Tin Blocks, Ingots, Bars and Slabs)	51,923 5,257	17,892	6,117,507 1,057,318	3,521,075
White Arsenic	5,278	17,652	55,424	342
Other Arsenic Compounds	137	237	6,902 398,798	6,273
Zinc Ore and Concentrates	129,442 180,748 764	9,960 6,571 13,655	2,946,383 11,400	45,329 165,291 249,319
(ii) Other Mine	rals.			
Baryles, not ground	32,860 19,946	13 4,148	47,203 74,817	41 17,282
Gypsem, burnt (including Plaster of Paris and other Gypseous Cements)	23,913 177,758	10,569 ‡ 2,736	38,195 111,842 ‡	38,465 ‡ 4,977
Fluorspar Soron Minerals (Crude and Concentrate of Boracite and Rasorite)	‡ 17,353		120,301	4,577
alc, Steatite and Soapstone.— Not ground	758	‡	5,691	‡ 936
Ground (including French Chalk)	23,784 9,750	7,890	103,796 12,382	16,257
Vacuum	5,121 31,375	102,563 169,584	10,566 32,115	292,814 414,933
Chalk, prepared (including Whiting)	1,494	27,170	3,593	89,326 96,189
Ball	123 4,146	57,544 449,375 16,536	1,100 8,215	762,331 32,472
Other Sorts	14,265 27,053	11,126 8,911	79,640 53,874	34,075 17,274
and, unground (other than Monazite Sand)— Silica Sand	184,105 153,872	‡	114,833 120,526	‡
and, ground (including ground Silica, Silica Flour and	27,423	2,205	39,587	11,124
tones and Slates, wholly or mainly unmanufactured— Granite, raw in blocks	15,774 309,831	931 537	49,162 165,188	2,615 495
Not elsewhere specified in official Import and Export List (including Quartzite)	4,310	7,259	15,778	17,262
tones and Slates, wholly or mainly manufactured— Slates for Roofing	26,915	3,311	123,631	35,387

^{*} And Northern Ireland. † Produce of Great Britain and Northern Ireland. ‡ Particulars are not available.

Table 40.—Average Declared Value per ton, fo.b., at each of the Principal Ports, of all classes of Coal (including Anthracite) Exported in each Month of 1936, together with the Annual Average Value for the Years 1936, 1935, 1934, 1933 and 1913.

	1 # 65	d.	7	411	30	1182	ဖတ	7	1 1 1 2
	Year 1913.	s.	12	222	15	13	13	11	
	46	d.	-	100	2 62	667	10	3	н
	Year 1933	s.	12			19 25 18	13	12	1191
	4 +	d.	6	110	20100	000	040	00	-
	Year 1934.	s.	12	132	17	20 24 19	13 13	12	11911
	#10	d.	6	100	0 4 W	411	440	-	4
	Year 1935.	°s.	13	555	17	1530	13	13	197
	4.60	a.	0	7000	10	142	1001	11	0
ii	Year 1936.	s.	14	13	17	24 27 27 27 27 27 27 27 27 27 27 27 27 27	25 14 14	14	7
ed	200	d.	TO.	070	717	047	0141	5	- man 21
Exported	Dec., 1936.	8.	15	447	17	18 22 22 22	23 15 15	16	1356613
EX		d.	00	04-	200	214	370	6	49480
Coal	Nov., 1936.	s.	15			19 24 12 12	23 14 15	15	13 19 14 14
) jo		d.		0000	1 co	0 7 0	1070	7	200000
f.o.b.,	Oct., 1936.	s.	15			18 24 21	21 41 14	15	1316
f.o		d.	9	900	079	040	∞ - 4	10	
Value per ton,	Sept., 1936.	S. (14			25 25 21 1	23 14 1 15	14 1	113 113 113 113 114
Jer		d.	0			000	9800		88000
lue F	Aug., 1936.	S. (14			21 25 22 22	22 14 14	15	13 1 13 1
		d.	6			010100	400	6	ньюнд
Declared	July, 1936.	Š	14			18 25 20	21 14 15	14	29998
ecl		d.	7	2-7	9 4	000	000	2	04444
	June, 1936.	s.	14	644	17	242	81 41 41	14	99554
Average		d.		4 0 0	000	000	647	6	041180
Av	May, 1936.	s,	14	133	17	222	21 41 41	14	7112
	-7.:	d.		10 4 C	000	01/10	100	0	11010
	April, 1936.	S. (14		1	25 25 22	20	14	146
		d.	01	10 m c			410-	00	005-H0
	Mar., 1936.	S. 6	14	13	17	222	20 15	14	112
		d.	9	710				6	611025
	Feb., 1936.	s.	14	6149	281	23 23	15 15 15	14	127 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		d.	9	401			9 1 8	0	248840
	Jan., 1936.		14		17		25 14 14 14	15	19119
		~ ·				- 22	2		
		England and Wales.	:511	ing North and South Shields) inderland	:::	:::	: :	:	
4	ent	ME	incl	th			nd.		rts.
Dowt of	pmd	an	. 0	S nd :		bot	tla and	:	Po Av
D	Shipment.	pus	100	ing North and South Shields) Inderland	oort ff	La. Isea Doc	Scotland. Sow tisland	caldy	All Ports.
		ngle	Blyth Newcastle finclud.	ing Nort South S Sunderland Hull	Newport Cardiff	Fort Talbot Swansea Liverpool	Scotland. Glasgow Burntisland Leith Wethil and Kirk-	cal	All Ports. (Annual Average, 1935
		园	MZ	. SH	ZÖR	LWL	RUMO		

TABLE 41.—Average Declared Value per ton, f.o.b., and the Percentage Proportion of each principal Kind of Coal Exported in 1913 and from 1927.

	AN'	THRACI	TE.		STE	AM.		GA	s.	HOUSE- HOLD.	OTH	
Period,	Small,	Sized.	Large.	Small.	Sized.	Through and Through.	Large.	Sized.	Through and Through.	Large,	Small.	Through and Through.
					A.—Ave	age Decl	lared Val	ue per T	on, f.o.b			
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Yearly Average:	13	11	17 8	10	10	12 5	15 5	*	12 4	13 6	*	12 4
1927 1928 1929 1930	10 0 8 4 8 10 10 1 8 7	38 8 31 11 31 2 32 8 32 4	33 4 28 5 30 4 31 7 31 5	12 9 11 3 11 9 12 8 11 8	16 8 14 6 15 4 14 9 14 1	15 7 14 1 14 8 15 2 14 1	19 6 16 11 17 6 17 8 17 6	18 6 14 6 15 0 15 2 14 8	16 2 14 4 14 8 15 4 14 7	20 8 18 11 20 3 20 2 20 7	13 11 12 6 12 6 13 4 12 5	16 0 13 7 14 2 14 7 13 5
1932 1933 1934 1935	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		33 0 33 7 34 3	11 1 11 1 11 1 11 3 11 10	13 10 13 8 13 10 14 3 15 8	14 2 14 3 14 7 14 8 15 1	17 1 16 11 16 9 17 0 17 4	14 7 14 7 14 10 14 10 15 5	14 5 14 6 14 4 14 4 14 3	19 6 19 1 19 5 18 11 21 1	12 5 11 10 12 1 12 6 12 9	13 2 12 11 13 0 13 3 13 6
Monthly Average:												
January February March	8 3 8 5 7 7	35 5 34 6 34 1	34 1 34 2 34 7	11 8 11 8 11 10	15 5 15 3 15 3	15 1 15 0 15 0	17 8 17 6 17 6	15 7 15 3 15 7	14 2 14 4 14 2	21 7 21 10 21 6	12 9 12 8 12 5	13 6 13 6 13 4
April June	.8 5 7 11 8 5	30 1 30 3 29 10	33 9 33 4 34 0	11 7 11 11 11 10	15 5 15 4 15 3	14 11 15 1 15 2	17 1 17 2 17 0	15 1 15 2 14 11	14 4 14 2 14 4	21 1 20 10 20 5	12 11 12 10 12 5	13 4 13 5 13 5
July August September	7 10 8 0 8 1	31 10 32 4 31 5	34 8 34 0 35 3	11 8 11 8 11 10	15 8 15 8 15 9	15 0 15 3 15 3	16 11 17 1 17 3	15 6 15 0 15 8	14 2 14 4 14 1	20 2 20 7 20 5	13 2 12 10 12 9	13 6 13 6 13 7
October November December	8 9 8 2 8 2	32 5 33 3 34 3	34 4 34 11 35 3	12 0 12 5 12 2	15 11 16 1 16 9	15 0 14 10 15 5	17 2 17 8 17 11	15 5 16 2 15 7	14 5 14 3 14 7	20 10 21 5 21 10	12 8 12 10 12 5	13 6 13 7 13 11
			1	B.—Perce	ntage P	oportion	of Total	Tonnage	e Export	ed.		
	%	%	%	%	%	%	%	%	%	%	%	%
Year: 1913	1	.9	2.2	17	.6	4.8	54.3	*	12.8	1.8	•	2.5
1927 1928 1929 1930	2·2 1·9 2·2 1·9 1·5	1.9 2.7 3.0 3.5 4.1	2·0 1·8 1·8 2·1 2·4	14·5 12·8 11·9 10·9 12·1	8·3 10·5 13·4 14·5 13·9	7·3 9·2 8·2 8·3 8·1	40·3 37·1 34·2 32·8 32·0	0·4 1·0 1·4 1·5 1·9	11·4 11·0 9·5 9·6 9·2	3·2 3·2 2·8 3·1 4·2	1·6 1·4 1·3 1·4 2·1	5·4 5·7 8·3 8·6 7·0
1932	1·4 1·5 1·6 1·3 1·4	5·8 6·4 6·3 6·2 6·0	2·8 2·5 2·5 2·2 2·2	10·9 10·2 8·9 8·5 8·8	16·3 19·6 22·1 22·8 23·7	8·2 7·6 8·6 8·7 10·1	31·6 30·7 29·9 30·6 27·7	2·2 2·1 2·0 2·2 2·6	7·9 7·1 6·4 5·5 5·2	3·1 1·9 1·5 2·5 3·4	3·5 3·6 2·9 2·4 2·3	4·6 5·0 5·6 4·8 4·1
Month: March, 1936 June, 1936 September, 1936 December, 1936	1.5 1.0 1.0 1.8	3·2 6·9 7·1 3·7	2·2 2·0 2·2 1·7	10·5 7·4 8·6 9·5	21·5 25·9 24·3 21·6	12·6 9·7 9·0 9·4	26·9 27·4 29·6 30·0	2·8 2·6 2·7 3·7	5·4 5·3 4·2 6·3	4.2 2.8 3.1 2.9	2·9 2·2 1·9 1·4	4·1 4·5 3·7 5·9

^{*} Not available. The proportion of small (including sized) gas coal exported in 1913 was 1·3 per cent. of the whole, and of 'other sorts' of coal 2·2 per cent. The corresponding figures in 1936 were 3·1 per cent. and 3·0 per cent., of which 2·6 and ·3 per cent. respectively, was sized gas coal and small coal of "other sorts."

* Information specially supplied.

TABLE 42.—Market Quotations of various kinds of Coal during each formight of the Year 1936.

Note.—Extracted from the "Iron and Coal Trades Review," the "Colliery Guardian," and "O'Connell's Coal and Iron News."

									ES.															ľ
Fifeshire Steam Coal.	Third Class.	F.O.B. Methil or Burntisland.		14/6	14/0—14/6	14	14/0-14/6	14	14/0—14/6	13/9—14/0		1			14/0—14/6	14/0-14/6	į			14/0—14/6		Ī	T	0/91-9/01
Fifeshire S	First Class.	F.O.B. Methil or Burntisland		15/6	15/6	7	14/9—15/0		T	14/9—15/0	15/0-15/6	T			15/0-15/3	14/9—15/0	15/0-15/6	15/0	5/0	15/0-15/3	16		16/6	10/01/10
	Nottingham Small Nuts at Pit	(for London Market).		0/0	18/0-19/0	0/0	18/0—19/0	0	7	15/6—19/0	/6—17/	6-17	/6-17	6-17	15/6—17/6	6-17	18	16/6—18/6	200	16/6-18/6	200	T	17/6—19/6	13/
	Nottingham Best Brights at Pit	(for London Market).			22/0-25/0		22/0-25/0	0	0	20/0—25/0		1			20/0-23/0		0/	000	0,9	21/6-24/0	0	21/0-25/0	22/0—25/0	0/07-0/77
Best		London Mar- ket).*	Ton.	29/6	29/6	29/6	29/67	27/6	27/6	24/6	24/6	24/6	24/6	24/6	24/6	24/6	25/6	25/6	9/97	9/97	26/6	28/6	28/6	
	Yorkshire Hards	at Fit.	Shillings and Pence per	19/6—20/0			19/6—20/0			19/6 20/0]		0		19/6-20/0	-) /	oN.	Conota-	2	tions.		
	Best House	on wagon at Pit.	Shillings and	28/8—29/8			28/82-29/8		6/	0/87 0/28/0	27/0—28/0	27/0-28/0	0	27/0—28/0	27/0-28/0					28/0-29/0			28/0-29/0	
,	Gas Coal	Finne F.O.B.		14/9	5—14/	5-1	14	14/5-14	14/5—14/	14/5-14/8	14/5—14	14/5—14/	14/5 - 1	41	14/5—14/8	14	-14	_14/	14/5—14/8	4/8/4	15/0	-16	16/3—17/6	
	South Wales Smokeless	F.O.B.		18/9—19/0	ĪĪ	9-1	18/9—19/0		$18/9 - 18/10\frac{1}{2}$	18/9—18/102		T		18/9—18/10	18/9—18/10		T		18/9—18/10			T	18/9—18/10	0
Street, or or other and the second	South Wales Large Steam	F.O.B.		18/3—18/6	18/3—18/6	18	18/3—18/6	18/	18	18/3-18/6	18/	-18	-180	18/3-18/6	000	18	-18	200	18/3—18/6		-18		18/3—18/6	1/01-0/
	Fortnight Ended		1036	January 16	February 13		March 12	April 9	23	May	June 4		July 2	16 20	August 13	27	September 10	C/1	October 8	November 5	19	December 3	17	10

TABLE 43.—Plant and Equipment in use at Mines under the Coal Mines Act, in Great Britain in 1913, 1920 and each Year from 1927, so far as particulars are available.

N.B.—Particulars of the number of machines and plant in use relate generally to the end of the year except in 1929 and following years, when particulars of Electric Motors and of

	Lamps.	Percentage Proportion of Total Safety Lamps in use.	%3	28	521	00000 00000			eable Coal	Percentage	Proportion of Total Output.§	200	288
ps in use.	Electric Lamps.	Total.	37,823	245,900	385,902 375,186 383,333 389,238 387,251	391,142 391,272 394,820 397,206 407,318			Cleaned saleable Coal produced.		Tonnage.	Thousands. 51,440	60,326
Safety Lamps in use.	amps.	Percentage Proportion of Total Safety Lamps in use.	9%	72	25.55 4.00 7.40 7.40	24 4 63 63 62 63 14 60 60 44		Coal Cleaning.	in use.		Flotation.	9	10 Q
	Flame Lamps.	Total,	740,001	635,127	465,251 416,018 401,510 379,551 337,345	295,521 270,417 242,901 222,541 209,539			Number of Plants in use		Cleaning.	27	53
	ri.	Horse Power.	256,652	461,944	805,812 824,672 835,588 861,680 872,615	885,131 904,194 927,082 953,328 978,331			Num	:	wash- eries.	505	527
e.	Above-ground.			· ·			-	d Drills		Drills for	Boring Shot-holes.		5,504 5,876 6,057
Electric Motors in use.	[A	Number	Not	avall-	16,763 17,147 17,530 18,390 18,804	19,476 20,309 21,032 21,980 23,043	_	Mechanical Picks and Drills	in use.	Picks for	Ripping, etc.	5,679	1,318
Electric N	Below-ground.	Horse Power.	371,417	618,763	878,311 897,660 918,116 954,784 960,921	970,131 984,408 1,022,104 1,057,004 1,109,093		Mechanic		Pneumatic Picks for	Coal getting.†		934 1,383
	Below.	Number.	Not	able.	19,332 19,548 20,268 21,589 21,858	22,282 22,914 24,310 25,480 27,325			Percentage	Proportion of Total	Óutput.	available.	122
	ut by ines.	Percentage Proportion of Total Output.	%0∞	13	22222	00 4 4 70 70 00 67 7 1 70		round.		Tonnage of Coal	conveyed.	Thousands.	27,976 37,150 42,495
Machines.	Coal cut by Machines.	Tonnage.	Thousands. 24,368	30,194	58,472 61,388 71,950 75,756 76,864	80,286 87,826 103,701 113,265 125,570	5	Mechanical Conveyors in use Below-ground	Elsewhere.	n by	Electricity.	available.	336 270 362
Coal-cutting Machines.	ber in use	Electricity	1,305	2,153	3,478 3,586 3,787 4,040 4,026	3,970 4,211 4,451 4,635 4,797		Conveyors in	Elsev	Driven by	Com- pressed Air.	Not	350 350 394
	Total Number in use driven by	Com- pressed Air.	1,590	2,918	3,638 3,545 3,574 3,597 3,345	3,167 2,938 2,955 2,837 2,837		Mechanical	At Coal Face.*	Driven by	Electricity.	734	1,064 1,315
	Number	of Mines at Work,	3,267	2,838	2,861 2,539 2,419 2,243	2,158 2,126 2,123 2,075 2,080			At Coa	Driv	Com- pressed Air.	1,344	1,311
		Year.	8161	1920	1927 1928 1929 1930	1932) 1933 1934 1935			•	Year.		1927	1928

* The numbers of Conveyors in use at the Coal-face in 1913 and 1920 were 359 and 825, respectively.

Including picks used for getting down coal in conjunction with coal-cutting machines. For the years 1930 to 1936, the numbers of such picks were 371 347, 302, 596, 713, 967 and 1,191 respectively.

45014

71,576 77,470 87,458 91,919 98.537

128 141 151 151 151

594 604 611 622 617

6,069 6,392 6,615 6,857

2,243 2,367 2,709 3,088 3,450

2,665 3,576 4,465 5,524 6,464

200244

52,666 62,156 81,493 95,611 109,318

474 593 745 897 1,091

381 446 534 630 670

1,600 1,878 2,148 2,480 2,767

1,665 1,839 1,942 2,133 2,199

1932 1933 1934 1935 1936

394

1,476

1,661

570

Table 44.—(a) Electrical Equipment; (b) Coal-cutting Machines and Mineral cut; (c) Conveyors and Loaders used Below ground and Coal conveyed; (d) Safety Lamps in use; (e) Explosives used, Shots Fired and the number of Miss-fire Shots; and (f) Horses employed Below ground, and the Casualties to them at Mines under the Coal Mines Act in Great Britain in the Year 1936.

		Miss-fre Snots; and (i) Horses employed Below ground, and the Casualties to them at Mines under the Coal Mines Act in Greut Brit												11		SCOTLAND.				GREAT I	DDITTATM								
									ENG	LAND AN	D WALES													SCOTL	AND.			GREAT	SMIAIA
	Northum- berland.	Durham.	Cumber- land and West- morland.	Lan- cashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Notting- ham- shire.	Derbyshire, I North.	Derbyshire, South.	Stafford- shire, North.	Cannock Chase.	Stafford- shire, South, and Worces- tershire.	Leicester- shire.	War- wick- shire.	SITTOD.		Somer-setshire.	Bristol.	Kent.	South- Wales and Monmouth- shire.	North Wales.	Total for England and Wales.*	Fife, Clack- mannan, Kinross and Sutherland.	Lothians (Mid and East) and Peebles.	West Lothian, (Linlith- gow), Stirling, Renfrew and Dum- barton.	Ayrshire, Dumfries and Argyll.	Total for Scotland.	Year 1936.	Year 1935.
TOTAL NUMBER OF MINES AT WORK	100	230	29	160	119	121	45	91	13	73	39	70	16	19	44	32	13	3	4	422	28	1,689	49	32	251	59	391	2,080	2,075
										A	ELECTRIC	AL EQUIE	PMENT.—(30th June,	1936).														
Number of Mines at which Equipment is installed	72	158	18	102	85	80	45	55	11	26	23	20	15	16	12	9	10	3	4	270	12	1,060	48	27	155	42	272	1,332	1,324
Number of Electric Motors in use	4,712	6,197	468	2,637	4,838	2,269	2,887	2,626	259	1,260	1,410	251	605	1,283	120	308	213	38	456	6,104	390	39,575	2,547	1,751	5,024	1,471	10,793	50,368	47,460
Aggregate Horse-power of the Electric Motors in use: Below ground— Haulage Conveyors and Loaders Pumping Portable Machines Machines Auxiliary Ventilation Miscellaneous	H.P. 24,924 6,396 26,722 26,504 370 510 1,051	5,303 60,372 18,512 639 1,456	H.P. 4,057 229 2,501 1,488 12 192 270	1,885 20,251 4,675 118 341	4,730 23,027 9,519 237 365	H.P. 14,506 605 10,350 3,590 280 101 2,153	H.P. 24,748 6,185 5,385 10,340 145 205 224	190 88	H.P. 3,023 373 1,197 1,523 25 10	H.P. 10,010 1,499 9,535 1,674 35 6 84	H.P. 11,765 2,384 2,352 5,100 36 108 117	H.P. 1,866 27 1,717 346 5 123 60	H.P. 3,890 953 1,284 2,880 93 18 34	H.P. 11,018 2,538 3,706 3,773 62 69 288	H.P. 824 10 752 214 —	H.P. 3,720 95 11,112 331 — 6 315	H.P. 2,109 90 2,545 95 — 101 120	H.P. 544 1,050 75 —	826	H.P. 85,985 866 88,654 3,034 64 235 4,798	H.P. 3,424 542 1,198 1,150 68 57 295	H.P. 371,036 39,523 304,512 105,704 2,504 4,104 20,541	H.P. 19,543 5,012 35,821 10,536 143 1,691 2,485	H.P. 14,856 2,950 22,360 4,350 259 1,065 662	H.P. 29,466 4,743 46,974 22,408 352 2,834 1,590	H.P. 8,406 1,825 12,642 6,977 133 613 473	H.P. 72,271 14,530 117,797 44,271 887 6,203 5,210	H.P. 443,307 54,053 422,309 149,975 3,391 10,307 25,751	H.P. 431,107 47,101 405,053 138,164 3,439 9,925 22,215
Total	86,477	167,660	8,749	48,020	83,180	31,585	47,232	51,839	6,256	22,843	21,862	4,144	9,152	21,454	1,800	15,579	5,060	1,671	15,290	183,636	6,734	847,924	75,231	46,502	108,367	31,069	261,169	1,109,093	1,057,004
Above ground— Winding Ventilation Haulage Coal Cleaning or Screening Miscellaneous	17,327 7,912 3,829 14,127 10,704	16,368 25,629	382 2,234	3,698 1,880 13,715	4,774	4,131 6,193 1,856 14,997 19,385	12,142 6,000 1,379 16,779 25,941	2,453 4,392 1,617 11,297 15,726	162 435 264 546	148 2,104 1,262 4,740 12,955	2,093 910 1,865 4,367 5,559	98 250 516 1,178 999	175 300 339 1,977 1,226	3,539	308 189 293 257 439	720 367 731 548 1,066	130 225 242 793	100 60 95 113	1,698 4,643	56,015 39,951 31,695 34,014 111,788	10 750 244 2,501 2,664	148,498 117,981 73,217 186,528 371,271	5,545 1,800 1,925 8,076 4,844	995 1,211 1,172 3,842 6,365	4,616 5,266 5,962 11,254 9,286	952 1,602 1,137 2,807 2,179	12,108 9,879 10,196 25,979 22,674	160,606 127,860 83,413 212,507 393,945	127,433 82,311 204,359
Total	53,899							-	1,407		14,794	3,041	4,017	-	1,486	3,432			11,101	273,463	6,169	897,495	22,190	13,585	36,384	8,677	80,836	978,331	
Total Below and Above ground	140,376	319,328	17,105	97,875	209,733	78,147	109,473	87,324	7,663	44,052	36,656	7,185	13,169	35,767	3,286	19,011	6,450	2,039	26,391	457,099	12,903	1,745,419	97,421	60,087	144,751	39,746	342,005	2,087,424	2,010,332
								В	.—COAL-CU	TTING M.	ACHINES A	AND MINE	RAL CUT.	-(Year en	ded 31st 1	December,	, 1936).												
Number of Mines at which Machines were in use Number and Type of Machines in use:—	63	86	9	79	62	. 44	40	49	7	29	23	8	12	13	5	3	2	2	3	102	8	649	44	23	114	34	215	864	
Disc	15 704 72	20 639 464	2 3 50 7	8 27 338 485	437 131	49 2 240 157	14 16 302 13	6 379 61	- 41 5	2 224 66	3 188 15			- 1 127 8	1 10 2		3 	_ 2		24 391 67	 1 64 30	74 121 4,295 1,593	12 26 291 2	22 126 —	105 63 610 21	10 19 194 11	132 130 1,221 34	206 251 5,516 1,627	249 287 5,245 1,61
Total No. of Machines driven by Electricity Compressed Air	791	555 588	46 16	156 692	284	114 334	293 52	348 98	_ 46	72 220	167 39	15 4	95	127 9	13		- 3.	_ 2	11	102 380	38 57	3,300 2,783	331	149 4	783 16	234	1,497 20	4,797 2,803	4,635 2,837
Total Number of Machines	791	1,143	62	858	569	448	345	446	46	292	206	19	104	136	13	12	3	2	11	482	95	6,083	331	153	799	234	1,517	7,600	7,472
Tonnage of Coal cut by Coal-cutting Machines:— Disc Bar Chain Percussive and Other Machines	Tons. 137,606 12,295,089 246,678	Tons. 293,168 10,370,693 1,715,755	Tons. 23,717 14,395 724,653 4,978	7,262,868	Tons. 5,600 13,961,181 458,543	Tons. 371,257 10,025 4,995,252 259,618	Tons. 127,688 158,123 10,409,919 5,766	Tons. 76,811 9,269,179 107,651	Tons	Tons. 34,949 6,241,627 141,412	Tons. 42,804 2,883,634 10,727	Tons. 120,499 7,315	Tons 1,883,478 3,456	Tons. 2,180 3,946,495 4,979	7 ons. 2,268 197,984 985	Tons. ————————————————————————————————————	Tons	Tons	Tons. — 358,403 —	Tons. 331,359 6,783,036 36,624	Tons. 1,300 1,691,298 216,532	Tons. 570,213 1,256,803 94,263,119 4,219,300	Tons. 141,666 108,280 7,426,917 1,591	Tons. 66,428 237,334 2,590,580		Tons. 80,444 168,466 2,784,356 37,857	Tons. 1,519,831 1,130,451 22,511,786 98,851	Tons. 2,090,044 2,387,254 116,774,905 4,318,151	5 103.679.020
Total Quantity of Coal cut†	12,679,373	12,379,616	767,743	8,447,861	14,425,324	5,636,152	10,701,496	9,453,641	631,601	6,417,988	2,937,165	127,814	1,886,934		201,237	166,629	53,253	23,402	358,403	7,151,019	1,909,130	100,309,435	7,678,454	2,894,342	11,617,000	3,071,123	25,260,919	125,570,354	113,264,603
Percentage of Total Output cut by Machines	88	39	65	58	47	48	71	76	79	91	54	9	70	70	29	12	7	25	18	21	67	51	88	60	83	69	79	55	51
							C.—(CONVEYORS	AND LOAD	ERS USE	D BELOW	GROUND,	AND COA	AL CONVEY	ED.—(Ye	ar ended	31st Decer	mber, 198	36).								,		
Number of Mines at which Conveyors were in use	42	62	3	64	55	27	37	38	6	21	17	2	10	12	1	2	3	1	3	110	6	522	32	12	53	18	115	637	592
Number of Conveyors Along Coal Face Electric Compressed Air Elsewhere Electric Electric Electric Electric Compressed Air Electric Elec	318 ————————————————————————————————————	104	9 7 1 2	89 447 52 93	106	44 117 16 30	315 61 93 4	253 44 85 8	- 24 - 12 	57 209 46 62	120 20 31 2	- 1 - 1	58 9 14 2	15	_ 1 	- 6 - 1	_ 6 	_ 1 	50 19 11 2	46 739 14 264	17	2,016 2,150 845 662	262 106	-	49	- 93 - 33	49	2,767 2,199 1,091 670	2,480 2,133 897
Total Number of Conveyors	501	479	19	681	784	207	473	390	36	374	173	3	83	186	1	7	6	1	82	1,063	124	5,673	368	145	415	126	1,054		
Number of Loaders { Electric Compressed Air	18	33 19	_ 6	3 31	47 34	9 34	77 29	71 7	_ 2	8 12	29	_	22	1					8 2	3 16		355 185	14	-	4	_ 8	172	527 189	515
Tonnage of Coal Conveyed Swith Loaders		1,336,181	105,085	Tons. 7,660,704 1,051,830 8,712,534				Tons. 4,369,439 3,047,714	20,505	664,884	Tons. 1,576,018 780,004 2,356,022	Tons. 26,212	805,889						1,232,555 357,244	11,669,987 593,316		Tons. 71,538,385 20,137,453 91,675,838	986,929	1,724,231	2,249,062	126,952	5,087,174	Tons. 84,098,515 25,224,627	Tons. 73,127,928 22,483,489
Total Tonnage of Coal Conveyed	6,561,989	6,570,241	215,182	8,712,534	56	2,896,876	77	7,417,153	365,149	6,272,848	2,356,022		1,317,377		2	157,557	98,741	10,641	7,369,799	12,203,303	2,315,624	91,675,838		-	7.17.1		17,642,304		
Percentage of Total Output Conveyed	1		10	1 1:	ira and No.		n particul						1		the fell-			inorela.	lano chini	1 00	in 7		84		1	38 10.213 tons.	55	48	43
Including mines	under the C	oal Mines Ac	t in Clevelan	id, Lincolnsh	He and Nort	uamptonshir	e, particulai	is or which at	e not melud	en in the b	realons col	amil2.	1	in addition	rue milo,	wing quai	ititles of m	mierais w	vere obtain	ned by mach	ine-Ironsto	one 161,281 t	ons: Firecla	v 120 328	tons · Clar	10 919 tone	J 7 D		

Including mines under the Coal Mines Act in Cleveland, Lincolnshire and Northamptonshire, particulars of which are not included in the previous column

In addition, the following quantities of minerals were obtained by machine-Ironstone 161,281 tons; Fireclay, 120,328 tons; Clay, 10,213 tons, and Iron Pyrites, 116 tons.

APPENDIX A .- STATISTICAL TABLES.

TABLE 44—continued.

Total Classic Wisconess		1											DLC 11										11	11				11	1	
Part			1	1		1		,			ENGLA	ND AND Y	WALES.							7					SCOTI				GREAT	BRITAIN.
Pairs Pair			Durham.	land and West-	cashire and	Yorkshire, South.	Yorkshire, West.	ham-			Stafford- shire, North.	Cannock Chase.	shire, South, and Worces-	Leicester- shire.				Somer- setshire.	Bristol.	Kent.	Wales and Monmouth-		for England and	Clack- mannan, Kinross and	(Mid and East) and	West Lothian, (Linlithgow), Stirling, Renfrew and Dum-	Dumfries and	for	Year 1936.	Year 1935.
Process Proc											D	SAFETY	LAMPS IN	USE.—(3	0th June, 1	936).		1		,										
## Property	Flame Safety Lamps.																													
Plane 1 100 100 100 100 100 100 100 100 100	I. Marsaut	7,442	34,296		8,396		5,119	3,245									_	28 2	18	822			103,541						105,981	100,077
Types of England March Mar	Flame \ Used by Officials	2,305	6.164		22,572 2,460 1	19,493 2,944	8,562 1,700								2,933 580 —		Ξ		12 6				172,077 26,742 92		159 227			7,445 3,177 6	179,522 29,919 98	29.532
Type of Lamp (10) Hand (4,000 4,000	Total	9,886	43,405	1,420	25,033	22,437	10,262	10,322	15,265	1,167	6,977	8,240	1,215	2,339	3,513	1,579		30	18	822	31,440	3,218	198,911	1,850	386	6,846	1,546	10,628	209,539	222,541
Part of California 1,500	Electric Safety Lamps.																													
## Part Lang Annual Part Lan		4,060	29,419 4,358	2,581 352	2,406	2,911	1,611	30,681 2,565		1,386 694						1,109	_	138					350,547 24,806	104 5,508	3,732		217 5,279		353,130 54,188	
Element 194 72			25,285		13,692	42,455		25,741					292	3,007 —	4,959		=	140	278 — —	5,079		2,393	252,573						278,478	285,611
Total Number of Safety Lamps in use	Electric \ Used by Officials	194	713		1,104	1,786	759	967	415		422			98	421		=	131	270 8 —		814		8,613	724		985		2,244	10,857	9,235
Exercisives USED, SHOTS FIRED AND NUMBER OF MISS-FIRE SHOTS.—Year ended Slid December, 1989. Committy of Explosives und (see also Table 49)	Total	8,709	33,777	2,933	27,452	68,215	29,905	33,246	26,343	2,080	14,842	13,756	2,095	3,021	10,686	1,111		140	278	5,079	86,457	4,930	375,353	5,612	3,739,	17,118	5,496	31,965	407,318	397,206
Quantity of Explosives used (see also Tuble 45)	Total Number of Safety Lamps in use	18,595	77,182	4,353	52,485	90,652	40,167	43,568	41,608	3,247	21,819	21,996	3,310	5,360	14,199	2,690		170	296	5,901	117,897	8,148	574,264	7,462	4,125	23,964	7,042	42,593	616,857	619,747
Estimate Number of Shots Fired by: Destination Company Comp								E	-EXPLOSIV	ES USED,	SHOTS FI	RED AND	NUMBER	OF MISS-F	FIRE SHOT	S.—(Year	ended 31	st Decemb	oer, 1936).											
Electric Detentance—	Quantity of Explosives used (see also Table 45)	<i>lb</i> . 2,659,623	lb. 4,815,342	1b. 264,572	lb. 2,138,841	<i>lb.</i> 1,860,076	lb. 984,365	<i>lb.</i> 740,819	lb. 986,903	lb. 120,673	lb. 1,105,145	lb. 504,218	lb. 217,496	<i>lb</i> . 419,613	lb. 638,384	lb. 75,091	lb. 52,628	lb. 89,265	lb. 6,907	lb. 43,208	2,109,251	lb. 372,803	<i>lb</i> . 20,829,721	lb. 1,324,527	lb. 722,547	lb. 3,629,344	lb. 801,336	lb. 6,477,754	lb. 2 7,307,475	lb. 25,167,06 3
Number of Mises at which Horses were employed (at 30th June) Number of Mises at which Horses were employed (at 30th June)	(i) High Tension	630,299 979,606	626,696 558,886	4,582 73,614	1,797,179	2,625,750	1,527,989	1,226,632	1,225,209	118,305	588,416 74,582	853,936	71,640	430,948	1,071,789 58,632	28,718 54,320	46,710 22,579	10,060 137,919	2,540 5,337	73,607	1,432,218	399,666 13,621	14,798,257 3,488,411	1,137,643	147,944 1,287,969	2.091.842	964,835 568,950	4,342,264 7,645,919	19,140,521	17,116,412 10,538,241
Electric Detonator— (1) High Tension 370 2,122 82 1,134 477 2,06 148 393 16 443 169 - 52 164 15 71 121 26 3 111 - 11 311 30 2,855 58 11 10 15 19 2,855 58 11 10 15 10 15 19 2,855 58 11 10 15 10 15 19 2,855 58 11 10 15 1	Total ··	5,946,783	10,033,005	586,505	5,206,264	4,086,827	2,536,350	1,730,148	2,381,937	248,349	2,324,314	1,242,241	310,611	755,164	1,488,196	139,236	112,706	147,979	7,877	73,607	4,393,332	835,224	45,868,164	2,762,061	1,435,913	6,946,922	1,648,991	12,793,887	58,662,051	54,373,251
Total	(i) High Tension	16 121	46 209	3	295	413	313	285	318		263	204		71	121	15 26 3	3 32	 11 74 	_ 9		311 274	90	2,855 1,401				93		2,623	2,652 2,590
F.—HCRSES EMPLOYED BELOW GROUND, AND THE CASUALTIES TO THEM.—(Year ended 30th June, 1936). Number of Mines at which Horses were employed (at 30th June) 63 151 5 6 62 45 42 51 6 6 6 23 36 12 6 14 9 10 1 — 305 6 873 5 7 41 10 63 936 969 Number of Mines at which Horses on Colliery Books (at 30th June) Number of Cases of Injury caused by Accidents below Mines for work for seven consecutive days or more. 95 315 4 1 84 73 38 51 5 1 33 9 9 6 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		773		155	1,461	919	557	445	722	59	777	375	134	208	303	44	35	85	9	11	1,532	312		338	127	769	282	1,516		
(at 30th June)			1			1	1	F.	HCRSES	EMPLOYED	BELOW	GROUND,	AND THE	CASUALT	TES TO TH	EM.—(Yes	ar ended	30th June	, 1936).		1									
(at 30th June)	f Mine of which Harces were employed	1												************	1 1	1								1 1						
Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses on Colliery Books (at 30th June) Number of Horses case of Colliery Books (at 30th June) Number of H	(at 30th June)	03		5	6					6	6				6		9		1 30			6		5						969
(i) Death or Destruction 361 897 22 2 29 341 177 396 36 — 102 22 68 27 15 11 8 9 — 1,287 3 4,116 — 8 66 4 78 4,194 4,826 Number of Horses cast or destroyed by reason of Disease, Old Age or Infirmity 274 896 1 8 174 170 108 159 20 1 55 4 61 2,712 2,946 1 8 174 170 108 159 20 1 55 4 61 2,712 2,946	Number of Cases of Injury caused by Accidents	3,164			170					192		.,	723	000	179	27.1	200	03				124		17	49	714	51	831	33,136	35,505
Cays or more Cays of more Cays	(i) Death or Destruction (ii) Unfitness for work for seven consecutive			^ {	1					36	_ 1		22	68	27	15	11	8		_		2		1	1		-			
Disease, Old Age or illility Number of Cases of Ill-treatment reported to	Number of Horses cast or destroyed by reason of	274			8						1					9		4				7			8 2		4			
	Number of Cases of Ill-treatment reported to	2		1	-	3	4	4	8	-	_	1	_	-	-	-	-	-		-	_			-		-		-		2,946 36

^{*} Including mines under the Coal Mines Act in Cleveland Lincolnshire and Northamptonshire, particulars of which are not included in the previous columns,

TABLE 45.—Quantity of Explosives used at Mines, Quarries and certain other Mineral Workings, and the Number of Shots Fired and Number of Miss-fire Shots at Mines under the Coal Mines Act in Great Britain during the Year 1936.

Used at	Nitro- Glycerines.	Ammonium Nitrates (Non-nitro- glycerine).	Nitrate	Gun- powder.	Low Density.	Total.
	(a) Qua	entity (lb.) of	Explosives used Mineral	at Mines, Que Workings.	arries and ce	rtain other
Mines under the Coal Mines Act: Permitted Other	12,130,910 3,243,582	4,520,047 600,821	28,052	3,423,166	3,360,897	20,011,854 7,295,621
Total	15,374,492	5,120,868	28,052	3,423,166	3,360,897	27,307,475
Mines under the Metal- liferous Mines Regula- tion Acts	1,834,280 2,072,490	77,455 2,390,684 239	150	633,679 3,174,405	833	2,545,414 7,638,562 239
Total	19,281,262	7,589,246	28,202	7,231,250	3,361,730	37,491,690
		(b) Estimate	d Number of Si Coal Min		lines under t	he
By Electric Detonator: High Tension Low Tension	13,593,698 11,794,853	5,954,411 3,445,988	337	48,200 3,673	5,855,448 3,895,670	
Total	25,388,551	9,400,399	337	51,873	9,751,118	44,592,278
By Fuse By Squib	6,717,893	1,556,182	56,236	2,495,405 2,935,443	308,614	11,134,330 2,935,443
Total	32,106,444	10,956,581	56,573	5,482,721	10,059,732	58,662,051
	(c) Nu	imber and Proat i	oportion of Mis Mines under the	s-fire Shots du	ring 1927 an	d 1936
Year.			Shots f	ired by		
	Electric De	tonator.				
	High Tension.	Low Tension.	Fuse.	Squib	•	Total.
		(i) Number of l	Miss-fire Shots	.	
1927 1936	18,83		7,083 2,623	4,93 2,84		30,847 15,190
			(ii) Miss-fire F	Ratio: ONE in	n	
1927 1936	3,856	6,131	1,841 4,245	1,12 1,03		1,750 3,862

^{*} In addition 158,024 lb. of Liquid Oxygen were used as an explosive.

Note.—Blasting Appliances.—In addition, 342,910 lb, of Carbon Dioxide were used at Mines under the Coal Mines Act for blasting by means of permitted Cardox Cartridges, and also 33,874 lb. of Hydrox Powder, the number of shots fired being 232,861 and 39,906, respectively (by Electricity—Low Tension).

Table 46.—Number of Separate Fatal and Non-fatal Accidents at thereby during

(i.) FATAL ACCIDENTS.

	1 N	(1.) FA	of Sep					Number	r of Po	rsone T	Zillad	at
				under						nder th		at
		Mines .ct.	ous I Regu Ac	llifer- Mines lation ets.		All ines.	4	Mines	ous I Regu Ac	llifer- Mines lation ts.		All ines.
Place or Cause of Accident.	Coal Mines	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Iron- stone Mines			1935.	Coal Mines	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Iron- stone Mines	Other Mines	1936.	1935
Explosions of Firedamp or Coal-dust	9		_	_	9	7	71			_	71	37
FALLS OF GROUND. At the working face	276 48 46 —	1 2	-	5 1	282 51 46	340 62 59	283 48 46	1 2	=	5 1	289 51 46	348 65 60
Total	370	3	•	6	379	461	377	3		6	386	473
SHAFT ACCIDENTS. Overwinding	_						_		_	100 m	_	-
Whilst descending or ascending by machinery	1		_	_	1	2	3	_	_	_	3	2
Falling into shaft from surface Falling from part way down	7	_		_	1 7	2 4	7		=		7	2 2 4
Things falling into shaft from surface Things falling from part way down Other shaft accidents	1 8	=	=	=	1 8	2 8	1 8	-	_	=	1 8	2 8
Total	18		_	[-	18	19	20			_	20	19
UNDERGROUND HAULAGE ACCIDENTS. Ropes or chains breaking Run over or crushed by trams or tubst:	13	_			13	4	13	_	_		13	4
Mechanical haulage	75 18 8 41 142	1 - 1			76 18 8 41 143	73 25 12 55 165	75 18 8 42 143	1 - - 1			76 18 8 42 144 8	73 25 12 56 166 17
Total	7 162	1 2			164	17	7 163	2		_	165	187
MISCELLANEOUS UNDERGROUND												
By explosives Suffocation by natural gases By underground fires Irruptions of water Electricity By machinery Other accidents	10 5 1 1 5 28 36			2 - 3	13 5 1 1 5 28 39	16 4 - 1 3 19 33	10 8 1 7 5 28 36	1 = = = = = = = = = = = = = = = = = = =		2 4	13 8 1 7 5 28 40	17 6 -2 3 19 33
Total	86	1		5	92	76	95	1		В	102	80
Total Underground	645	6		11	662	749	726	6		12	744	796
ON SURFACE. By machinery	20	8=	_		20	20	20 1	=	=	_	20	20
On railways, sidings or tramways: While engaged in moving wagons While engaged in coupling or uncoup-	9		-	-	9	8	9		-	-	9	, 8
ling wagons	- 1	-		-	1	2	1	-	-	-	1	2
railways or tramways Crushed between wagons & structures In other ways Total	5 5 8 28	_		=	5 8 28	6 3 16 35	5 5 8 28				5 8 28	6 3 16 35
Electricity	1 8	=	_	_	1 8	1 34	1 8	_	-	=	8	34 34
Total on Surface	58		_	_	58	90	58		_	_	58	90
Grand Total	703	6	_	11	720		784	6	_	12	802	
Total in 1935	805	11	2	21		839	849	12	4	21	_	886

^{*} Including Shale and Fireclay Mines.

† The following classes of accidents, which are reported at the time of their occurrence to H.M. Divisional Inspectors personal injury; (b) Acidents caused by explosion of gas or dust, or any explosive, or by electricity, or by overof more than three days and are included in the preceding column.

‡ Not including accidents primaily due to ropes or chains breaking.

Mines in Great Britain, and Number of Persons Killed and Injured the Year 1936.

(ii). NON-FATAL ACCIDENTS DISABLING THE PERSONS INJURED FOR MORE THAN THREE DAYS.

Num		eparat		lents at M	ines			rsons l		at Mines			ber of
Coal M Act	•	Metal ous M Regul Ac	lines ation	A Mir	ill nes.	Coal M	t.	ous l Regu Ac	llifer- Mines llation ets.		all nes.	Injured at N	seriously in 1936 lines or the
Coal Mines.	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Iron- stone Mines	Other Mines	1936.	1935.	Coal Mines.	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Iron- stone Mines	Other Mines	1936.	1935.	Coal Mines Act.	Metalli- ferous Mines Regu- lation Acts.
30				30	35	56				56	62	63	
39,513 4,517	193	54 2	158	39,918 4,522	39,711 4,362	39,596 4,540	194 2	54 2	161	40,005 4,545	39,747 4,373	1,095 149	15 1
3,169	5	2	11 1	3,187 10	3,204 6	3,190 8	_5	2	11 1	3,208 10	3,218 6	105	- 1
47,207	200	59	171	47,637	47,283	47,334	201	59	174	47,768	47,344	1,349	17
8 2		_	2	8 4	6 3	39	_	_		39 5	33 3	42	_
2 11		-		11	18	12	-	_	_	12	21	1	_
6		_	3	9	11	8	-		3	11	114	5 2	_
51 124	_	2	2 15	53 141	42 108	51 125	_	2	2 15	53 142	42 1 110	2 2 8	_ 2
202	_	2	22	226	188	238	_	2	22	262	220	60	2
140	_	-		140	92	145	-	_		145	92	17	-
6,232 5,378 6,464 419	9 38 10	31	59	18,641	19,230	6,247 5,381 6,469 434	9 38 10	31	59	18,679	19,271	253 123 122 94	$-\frac{2}{1}$
18,493 14,829	58 68	31 26	59 66	18,641 14,989	19,230 15,101	18,531 14,847	58 68	31 26	59 66	18,679 15,007	19,271 15,118	592 133	3
33,462	126	57	125	33,770	34,423	33,523	126	57	125	33,831	34,481	742	4
162 2 3	7	1	9	179 3 3	187 10 7	175 2 7	7	1	12	195 3 7 3	211 10 11	199	13
3 2 24		_	_	2	1 32	3 25	_	_	_	3 25	2 34	- 33	
24 2,996 40,071	248	5 86	37 333	3,038 40,738	2,362 39,188	3,000 40,089	248	5 86	37 335	3,042 40,758	2,365 39,192	111 247	17
43,260	255	92	380	43,987	41,787	43,301	255	92	385	44,033	41,825	592	30
124,161	581	210	698	125,650	123,716	124,452	582	210	706	125,950	123,932	2,806	53
734 7	3	8	26 1	771	675 9	734 7	3	8	26 1	771 8	675 9	_35	_ 2
1,471	11	1		,	[1,472	11	1			[64	1
296	2	16	64	3,615	3,694	296	2	16	64	3,617	3,695	11	
123 399	2 4					123 399	2 4					12 13	
1,222 3,511	5 24	16	64	3,615 10	3,694	1,223 : 3,513 12	5 24	16	64	3,617 12	3,695	32 132 17	2 3
6,597	30	16	148	6,791	6,524	6,611	30	16	148	6,805	6,531	127	5
10,859	57	40	239	11,195	10,919	10,877	57	40	239	11,213	10,929	311	10
135,020	638	250	937	136,845		135,329	639	250	945	137,163		3,117	63
133,071	471	227	866		134,635	133,285	471	232	873		134,861	3,257	66

of Mines are included, viz., (a) Accidents causing fracture of head or limb, or dislocation of limb, or any other serious winding, and causing any personal injury whatever. The majority of these accidents involve a period of disablement

TABLE 47.—Number of Deaths from Accidents and Death-rates in and about Mines in Great Britain* from 1873, Accident to the Cause of classified according

Annual Average. Annual Average. † The death-rates for underground accidents are based upon the number of persons so employed, and those for surface accidents upon the number of persons employed above-ground.

Note.—For comparable particulars of the output of mineral and the number of persons employed, see Tables 4 and 13. 1928 1929 1930 1931 1933 1934 1935 1936 1928 1929 1930 1931 1932 1933 1934 1935 1936 Decennial Period or Year. 1893–1902 1903–1912 1913–1923 1923–1932 1893–1902 1903–1912 1913–1922 1923–1932 There were five persons killed in 1887 and one in 1888 by explosions of firedamp. :::: REGULATION Total. 528825 1235 842883 92.68 1.12 2.13 3.12 9.99 On Surface. From Causes .19 B.-MINES UNDER THE METALLIFEROUS MINES 408884 23.88 Causes 115 22 22 12 2.35 2.15 2.15 1.82 1.82 up to the year Number of aneous Acci-2000 .68 .39 .37 .66 .63 .66 .51 Including particulars for Ireland (8) Haulage Acci-.18 .37 Under-ground, Acci-dents. 1 4 By Falls Ground. 20002 94 93 93 76 76 36 20 36 85 85 Jo of Fireplosions By Ex--02 Total. 3.36 3.36 3.36 21.882.5 989 970 810 88 188 188 889718 8838 On Surface. From 95 130 130 130 130 98 80 73 73 66 74 87 58 92 96 96 78 78 59 50 37 37 42 42 38 51 34 34 DEATH-RATES FROM ACCIDENTS UNDER AND ABOVE-GROUND From Causes. ,037 926 895 895 ,130 ,113 891 996 940 790 808 754 999 774 732 225 A.-MINES UNDER THE COAL MINES ACT. ear. 1932 1933 1934 1935 PER 1,000,000 TONS OF MINERAL RAISED. dents. 63 80 96 96 119 119 8728 98 77 96 .13 4.36 4.04 4.05 4.05 82 128 151 168 235 249 239 158 156 186 165 Acci-231 220 241 174 174 230233 252233 230 52 dents. Under-ground of Number Acci-28 16 16 20 28 33 39 39 113 03 03 03 ear, 927 929 929 930 931 (8) By Falls Ground. 454 442 458 380 927.799 453 448 573 607 .66 .69 .60 .60 7172 jo plosions of Firedamp or Coal-35 296 37 71 36 27 69 69 dust. 1873–1882 1883–1892 1893–1902 1903–1912 1913–1922 1873–1882 1883–1892 1893–1902 1903–1912 1913–1922 1923–1932 : : annual Average. Period or Year, Decennial 1893-1902 1928 1929 1930 1931 Annual Average. 1933 1934 1935 1936 Annual Average, 1928 1929 1930 1931 1931 1933 1934 1935 1936

Table 48.—Number of Persons Killed and Injured by Accidents at Mines in Great Britain per 100,000 Man-shifts worked from 1922.

	Mines u	nder the C	oal Mines	Act (except	tstratified	ironstone	Mines under the Coal Mines Act (except stratified ironstone mines in Cleveland, Lincolnshire and Northamptonshire).	veland, Li	ncolnshire	and North	amptonshi		Iron Mines.* Cleveland, Lincoln & Elsev	ines.* Elsewhere.	Other Mines.
Porc	one	Persons Employed Below	Below			Under-Ground.*	round.*			Surface.*	*.eo.	Un	der-Ground	Under-Ground and Surface.	!
e e	pu y	and Above Ground.	und.					Persons K	Cilled and	Persons Killed and Injured by-					
Killed.		Seriously Injured.	Total Injured.	Explosions of Firedamp or Coal Dust.	Falls of Ground.	Shaft Haulage Accidents, Accidents,	Haulage Accidents.	Other Causes.	All Causes Under-Ground.	Accidents on Railways, &c.	Other Causes.		All Causes.	18es.	
						Rate p	Rate per 100,000 man-shifts worked	man-shifts	s worked.						
0.40 0.43 0.44	0184	1.58	65·1 69·3 65·5	000.	28.5	4.00	21.0 22.5 22.6	27.2	83.9	6.9	17.8	65.5	62.5 69.5 61.5	42.9 35.3	31.6 33.8 31.1
0.39 0.41 0.40 0.42	450 440 450	1.68 1.64 1.53 1.54	65.9 66.9 63.4 66.9	00000	29.1 28.6 27.1 27.9	00000 44000	21.5 22.2 20.2 20.2 20.8	27.1 27.9 25.9 26.8 28.3	77.79 77.49 77.49 79.50 70.00 70.00 70.00	6.9 6.9 7.3 7.3	17.8 18.8 17.2 17.0	66.5.5	50.0 62.6 67.4 65.9 63.0	38. 4.7. 4.0. 3.7. 4.0. 3.7.	21.9 28.8 35.8 34.9
00000	0.45 0.43 0.43 0.41	1.85 1.77 1.70 1.62 1.57	68.5 69.0 70.9 66.9	0000.1	30.7 31.3 32.7 32.6	00000	21.0 23.2 21.9 23.7	30.0 28.5 30.9 30.4 27.1	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	6.9 6.6 6.4 7.1	16.4 15.7 16.0 15.5	68.9 69.4 71.2 67.3	70.4 71.4 71.4 70.0 62.5	39.6 33.8 26.2	33.8 35.6 37.6 31.0 28.3
00000	0.45 0.43 0.43 0.39	1.63 1.52 1.60 1.63	63.7 63.7 66.1 67.1	00000	30.2 30.7 31.4 31.7	00000	23.2 22.3 22.3 23.0	24.5 27.2 27.2 27.6 28.4	877 887 881 891 891 891 891 891 891 891 891 891	6.6 6.5 7.5 7.5	13.3 13.6 14.3 14.3	64.1 64.1 66.6 67.5	61.7 57.5 57.8 61.0 66.6	26.6 26.2 34.4 37.0	27.6 26.1 30.9 33.1 35.7

in 1936 was 152,554,609 below ground and 50,522,000 above-ground at mines under the Coal Mines Act (as defined above); 969,000 at stratified ironstone mines; 711,000 at other iron mines, and 2,681,000 at mines other than coal and iron mines. The actual number of persons killed and injured in 1936 (including those disabled for more than 3 days) are shown * The rates for underground and surface accidents are based upon the number of man-shifts worked below and above-ground, respectively. The estimated number of shifts worked

† January to April in respect of mines under the Coal Mines Act.

**Note:—The maximum hours so fabour below-ground at a coal mines in 1922 were 7 hours per day which were increased to 8 hours in July, 1926. In certain districts the increased hours were limited by agreement to 74, and since 1st December, 1930, this has been the statutory limit. In the case of surface workers engaged in the manipulation of coal the hours of presence in 1922-6 were 46½ in a full week, but have since been subject to modifications similar to those of workers below-ground.

Table 49.—Principal Colliery Disasters* from All Causes from 1901.

Year.	Date.	Name of Colliery.	County.	Nature of Disaster.	No. of Persons Killed.
1901 1902	May 24 Sept. 3	Universal McLaren, No. 1 Pit	Glamorgan	Explosion Explosion	81 16
1905	Jan. 21 Mar. 10 July 11	Combrian	Glamorgan	Explosion	11 33 119
1906 1907	Oct. 10 Oct. 4	Wingate Grange Foggs Washington "Glebe" Hamstead Norton Hill	Durham Lancashire	Shaft accident	25 10
1908	Feb. 20 Mar. 4 April 9	Washington "Glebe" Hamstead	Durham Stafford Somerset	Explosion Underground fire Explosion	14 25 10
1909	Aug. 18 Feb. 16	West Stanley	Lancashire	Explosion	75 168
1910	Oct. 29 Dec. 10 May 11	Whitehaven, Wellington Pit	Ayr	Irruption of water	27† 10 136
	Dec. 21	Hulton No. 3 Bank Pit	Lancashire	Explosion	344
1912 1913	July 9 Feb. 7 Aug. 3	Cadeby Main	Yorkshire Nottingham Lanark	Explosion Shaft accident Underground fire	88‡ 14 22
1914	Oct. 14 May 30	Wharncliffe Silkstone	Glamorgan	Explosion	439§ 12
1915	Feb. 25 June 30 Sept. 21	New Hem Heath	Stafford Nottingham Warwick	Underground fire Shaft accident Smoke and fumes	12 10 14
1916 1918	Aug. 13 Jan. 12	Woodhorn Podmore Hall, Minnie Pit	Northumberland Stafford	descending shaft. Explosion Explosion	13 155
	July 9	Stanrigg and Arbuckle	Lanark	Inrush of moss and water.	19
1922	July 13 Sept. 5	Plean Whitehaven, Haig Pit	Stirling	Explosion	12 39
1923	April 26 July 28	Caldean	Stirling	Runaway trams Explosion	10 27
1925 1927	Sept. 25 Mar. 30 Mar. 1	Maltby Main	Stirling Northumberland Monmouth	Inrush of water Inrush of water Explosion	40 38 52
1928	Mar. 1 Feb. 12	Bilsthorpe Whitehaven, Haig Pit	Nottingham	Shaft accident Explosion	14 13
1930	Feb. 26 Oct. 1	Grove	Lancashire Stafford	Explosion	13 14
1931	Jan. 29 Oct. 31	Whitehaven, Haig Pit Bowhill	Cumberland Fifeshire	Explosion Explosion	27 10
1932	Nov. 20 Jan. 25 Oct. 10	Bowhill Bentley Llwynypia, No. 1 Bickershaw, No. 3 Garswood Hall No. 9	Yorkshire	Explosion	45 11 19
1933	Nov. 12 Nov. 16 Nov. 19	Garswood Hall No. 9	Lancashire	Explosion	27 11 14
1934 1935	Sept. 22 Aug. 24	South Kirkby	Denbighshire	Explosion	265 10
1936	Sept. 12 Aug. 6	North Gawber, Lidgett Wharncliffe Woodmoor, Nos. 1, 2 and 3.	Yorkshire	Explosion Explosion	19 58

* Accidents involving the loss of 10 lives or more.
† Including five persons killed during rescue operations.
† There were two explosions on the same day. As a result of the first 35 persons were killed, thes econd explosion causing the loss of 35 members of the rescue parties.

In addition, one other man lost his life on the following day while working at a fall of stone.
Including three persons killed during rescue operations and one person killed when the sealing blew off the downcast shaft three days later.

Table 50.—Summary of Principal Colliery Disasters* and of all Accidents caused by Explosions of Firedamp or Coal-dust for Decennial Periods from 1851.

Note.—Particulars of these accidents from 1851 to 1900 will be found in Appendix IV of Part II of the Report of H.M. Chief Inspector of Mines for the year 1900, and for subsequent years in Table 49 opposite.

District.	1851- 1860.	1861– 1870.	1871- 1880.	1881– 1890.	1891– 1900.	1901- 1910.	1911– 1920.	1921– 1930.	1931- 1936 (6 years).	From 1851 to 1936.
			(i) Numl	per of S	eparate	Acciden	ts.		
Northumberland	2 2 4 10 —	2 1 2 11 3 -	- 2 4 9 - 1 5 11	5 2 5 1 1 3	- 1 2 - - - 1 4	-3 -2 - -6	-1 -2 - - - - 1		- 4 1 1 1	5 14 21 39 5 3 16 50
South Wales and Monmouth Other English Districts:— Cumberland Somersetshire Scotland	=	10 - 1		1 1 1	1 1	1 1	=	21	1 -2	5 4 9
All Districts $\begin{cases} \text{Disasters*} & \dots \\ \text{All Accidents} & \dots \end{cases}$	31 820	33 565	35 424	26 245	10 189	13 182	5 135	7 136	11 61	171 2,757
				(ii)	Numbe	r of Dea	aths.			
Northumberland	98 57 264 359 —	42 24 420 338 33 —	190 221 462 — 26	194 42 355 20 45	20 202 — —	207 — 419 —	13 100 —	27 13 —	132 27 265 14	153 692 1,408 1,973 318 85
Staffordshire, Salop, Worcester and Warwick	22 410	122 454	163 700	112 411	10 478	287	155 439	14 52	11	598 3,242
Other English Districts:— Cumberland	<u>-</u> 61			30 10 73	10 13	136 10	=	52 12	27 21	245 41 432
All Districts $\left\{ egin{array}{ll} ext{Disasters*} & \dots & \\ ext{All Accidents} & \dots & \end{array} ight.$	1,271 2,441	1,444 2,267	2,014 2,686	1,292 1,661	733 1,024	1,059 1,357	707 944	170 433	497 623	9,187 13,436

^{*} Accidents involving the loss of 10 lives or more.

Table 51.—Number of Separate Fatal and Non-fatal Accidents at Quarries in Great Britain under the Quarries Act, 1894, and Number of Persons Killed and Injured thereby during the Year 1936.

		Fatal A	ccidents.			al Accident		
Place or Cause of	193	36.	19	35.	19	36.	19	35.
Accident.	Number of Separate Acci- dents.	Number of Persons Killed.	Number of Separate Acci- dents.	Number of Persons Killed.	Number of Separate Acci- dents.	Number of Persons Injured.*	Number of Separate Acci- dents.	Number of Persons Injured.
INSIDE THE QUARRIES. (i.e., inside the actual pits, holes, or excavations.)								
Falls of Ground. From beyond the person's own working-place From the person's own working-place	15 15	17 15	14 11	14 11	} 823	824	617	626
Total	30	32	25	25	823	824	617	626
By Blasting. While charging or tamping From stones projected by shots, when persons had not taken sufficient	1	1	2	2	3	3	10	12
shelter	3 1 1	3 2 1			24 5 9	24 10 9	11 4 10	11 5 10
Total	6	7	3	3	41	46	35	38
During Descent or Ascent. Falling from paths, steps or ladders. When descending or ascending by machinery	1 1	1 1	1	1	52 1 38	52 1 39	41	41 —
Total	2	2	1	1	91	92	54	54
Miscellaneous. Ropes or chains breaking Machinery Boiler explosions On inclined and engine planes On railways, sidings or tramways Falling from ledges Electricity Other accidents	- 3 - 3 4 - 11	- 3 - 3 4 - 11	-1 -1 2 3 -8	1 -1 2 2 3 -8	9 159 1 22 814 82 2 2,460	9 159 1 22 814 82 2 2,462	3 89 9 590 67 3 2,512	3 89 -9 591 67 3 2,512
Total	21	21	15	15	3,549	3,551	3,273	3,274
Total Inside Quarries	59	62	44	44	4,504	4,513	3,979	3,992
OUTSIDE THE QUARRIES. Machinery Boiler explosions On inclined and engine planes On railways, sidings or tramways Electricity Other accidents	2 4 - 4	-4 -2 4 -4	2 - 2 - 3	2 - 2 - 3	163 10 394 2 1,072	163 — 10 394 2 1,074	119 1 8 261 — 1,164	119 1 8 261 — 1,165
Total Outside Quarries	14	14	7	7	1,641	1,643	1,553	1,554
Grand Total	73	76	51	51	6,145	6,156	5,532	5,546

^{*} For particulars of the number of persons injured by serious accidents see Table 53, Section III.

TABLE 52.—Number of Deaths from Accidents and Death-rates per 1,000 persons employed at Quarries under the Quarries Act, 1894, in Great Britain* from 1895, classified according to the Cause of Accident.

1100100100.							
		Inside	e the Qua	arries.		Outside the Quar-	
Decennial Period or Year.	By Falls	By Blast-	During Descent		From	ries.	Total.
	of Ground.	ing.	Ascent.	Acci- dents.	Causes.	Fromall Causes.	
	(a) Numb	er of Dea	ths.			
(1895–1904	44	11	3	37	95	20	115
Annual J 1905–1914 Average 7 1915–1924	36 21	10 8	1	28 19	75 49	15 11	90 60
1925–1934	25	6	î	19	51	12	63
1922 1923	16 31	7 11	1 2	15 21	39 65	7 14	46 79
1924	29	6	1	28	64	12	76
1925	22 24	11 10	<u>-</u>	29 22	62 57	12 10	74 67
1007	35	3	1	14	53	15	68
1927	29	4	1	24	58	8	66
1929	30 20	7 9	2	13 29	52 58	17 12	69 70
1931	22	3		15	40	10	50
1932	23	1	1	16	41	10	51
1933 1934	19 24	6	1	13 20	38	8	46 64
1935	25	3	1	15	44	7	51
1936	32	7	Danaana	21	62	14	76
(1895–1904	•73	·19	ersons	Employe -61	1.57	.45	1.09
Annual J 1905–1914 Average 7 1915–1924	·66	•19	•01	•53	1.39	·47 ·48	1.06
Average 1915–1924 1925–1934	•51	·21 ·13	·02 ·02	·49 ·40	$\begin{array}{c} 1 \cdot 27 \\ 1 \cdot 06 \end{array}$	•42	.82
1922	•38	.17	.02	•36	.93	•27	•68
1923 1924	·66	·24 ·12	·04 ·02	·45 ·56	$\begin{array}{c} 1 \cdot 39 \\ 1 \cdot 28 \end{array}$	·51 ·41	1·06 ·96
1925	-41	.21	_	.55	1.17	•41	.89
1926†	•46	•19	•02	•42	1.09	•34	•82
1927 1928	·67	·06 ·08	·02 ·02	·27	$1.02 \\ 1.14$	·50 ·28	·83 ·83
1929	∙58	.14	.04	.25	1.01	.58	.85
1930	•42	·19 ·06		·60 ·33	1·21 ·87	·42 ·37	·91 ·68
1000	•54	•02	•02	•38	•96	•41	•76
1933	•45	•14		•31	•90	•33	•70
1934 1935	·54 ·55	·13 ·06	·02 ·02	·45 ·33	1.14	·52 ·28	·92 ·72
1936	.67	.15	•04	•44	1.30	.54	1.03
	1						

^{*} Including particulars for Ireland up to the year 1921.

Note.—For comparable particulars of the output of mineral, and the number

of persons employed see Table 18.

[†] Employment in 1926 at certain quarries was indirectly affected by the dispute in the coal mining industry. The general effect on the quarry industry, however, was only slight, and similarly in the case of the effect upon death-rates from accidents.

‡ The death-rates for accidents inside the quarries are based upon the number of persons so employed, and those for accidents outside the quarries upon the

number of persons employed outside.

Table 53.—Total Number of persons Killed and Injured by

Note.—For the Number of separate Fatal and

I.-Mines under the Coal Mines Act, 1911 (not including Stratified Ironstone

					No	ote.—Fo	or the es	timated	l Numb	er of Ma	anshifts	worked
										EN	GLANI	D AND
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Place or Cause of Accident.	Northumberland.	Durham,	Cumberland and Westmorland.	Lancashire and Cheshire.	Yorkshire, South,	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South and Worcestershire.
		1			1	1	1	1	1	Α.	NUMB	ER OF
Explosions of Firedamp or Coal Dust	2	T —	1		61			-	1 -	Ī	1	1 -
FALLS OF GROUND.		0.5										
At the working face On roads while repairing or enlarging On roads while otherwise working	15 5	35 9	1	12 4	43	18 2	15 2	15	1	11 2	6	4
or passing	3	11	_	2	5	1	4	2	_	_	2	1
Total	23	55	2	18	54	21	21	20	1	13	8	5
SHAFT ACCIDENTS.		-										
Overwinding	_	_		=	_	_	=	=	=	_	=	_
Whilst descending or ascending by machinery	_		_		3	_	_	_	_		_	_
Falling into shaft from surface Falling from part way down	2	1	_	_	_	_	_	_	_		_	=
Things falling into shaft from surface		-			<u></u>	-	-	_	-	-		_
Other shaft accidents					3	1	1		=.	_		
Total	2	1			7	1	1					
UNDERGROUND HAULAGE ACCIDENTS. Ropes or chains breaking Run over or crushed by trams		1		_	1		_				_	-
or tubs*:— Mechanical haulage Horse haulage	_	14		4	12	2	4	-			_	_
Hand haulage	- 1	3 8	_	5	2 4	3	3			1 2	1	
Total	3	28		9	18 1	5	8	1	=	2 3 1	1	=
Total	4	29		10	20	5	9	1		4	1	
MISCELLANEOUS UNDERGROUND												
By explosives Suffocation by natural gases	1	1	_		3	_	1	1 2	_	_	=	_
By underground fires		=	_		_	_	_	_	_	1	_	_
Electricity	2	3		_	5	_		3	1	1	_	_
Other accidents	1	5		3	5	1	1	2		2 4	2	
M-4-1 YZ-2	35	98	2	3	13 155	28	2	8 29	1 2	21	11	5
ON SURFACE.		- 30		91	199		33			21		
By machinery		1		1	1	1	_	2	_	1	1	_
On railways, sidings or tramways: While engaged in moving waggons	86 —		_	1	_	2						
While engaged in coupling or uncoupling waggons		_	_	_	1						_	_
Run over while passing along or across railways or tramways	_	1	_		1	_	_	_	_		_	_
Crushed between waggons and structures	1	1		_	1		-	_	_	_	_	1
In other ways	2	2	_	2	1 4	2	1	_	=	1	1	1
Electricity Other accidents	1	_		2	1	1	=	=	_	_	_	=
Total on Surface	3	3		В	6	4	1	2	_	- 2	2	1
Grand Total	38	101	2	37	161	32	34	31	2	23	13	6
Corresponding figures for the Year 1935	41	107	3	66	125	46	35	40	5	27	22	9
18												

^{*} Not including accidents primarily due to ropes or chains breaking.

Accidents at Mines and Quarries in Great Britain in the Year 1936.

Non-fatal Accidents see Tables 46 and 51.

WALES.

Mines in Cleveland, Lincolnshire, and Northamptonshire, see Section II.) in each district in 1936 see pp. 192 and 193.

WALE											TLAND.		GREAT BI	RITAIN.
Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Bristol.	Somersetshire.	Kent,	South Wales and Monmouthshire.	North Wales.	Fife, Clackmannan, Kin-Nross and Sutherland.	Lothians (Mid and East) and Peebles.	Lanarkshire, West to Lothian (Linlithgow) Estriling, Renfrew and Dumbarton.	Ayrshire, Dumfries wand Argyll,	1936.	1935.
	NS KII	LED.												
1							1				5	1	71	36
7	5	3	1	_	1	1	44 9	5	5	6	23 2	6 2	283 48	331 62
_	_	_	_		_	=	11	_	1		2	1	46	55
7	5	3	1		1	1	64	5	7	6	27	9	377	448
	-	-		-										
_	=	_	_	=		=	=	_	=		_			
_			_		_		_	_	_	_			3 1 7	2 2 3
	_		_	=			=	_	=	_	1 2	2	7	3
_	=	=	_		_	_	_	_	_	_	_	_	1 8	
			_		1		1				1 4	2	20	16
							1				- 2	2	20	10
	_						. 8	_	_	1	2	_	13	4
	1		1	_	_	3	25		3	-	3	3	75	73
_	_	=	=		_	_	11 1 6	1	<u>-</u> 5	_	1 -2	_	18 8 49	25 11 56
	1	_	1	_	1	3	43	1	8		2 6	3	75 18 8 42 143	73 25 11 56 165 17
	1	_	1		1	3	52	1	8	2	8	8	163	186
_	-2		-			_			_	1	2	_	10	16 6
		automa automa	_	_			_	_	_	_	1	1	10 8 1 7 5 28 36	
_	_	_			_	_	7		<u>-</u>	1 2 1	1 3 3	_	5	2 3 19 31
2	_	1			_		6			1	3	1	36	31
2		1	1				20	2	1	5	10	2	95	77
	6	4	3		3	4	138	8	16	13	54	17	726	763
_	_		_			1	4		2		4	1	20 1	
	2	_		-		-	2	-	1		-	1	9 .	8
-	-	_	_			_					-		1	2
	1	_	-		-	-	- 1	-	-	1	1	-	5	6
_	_	_		=	_		1 2 5	=	-1	_	_	=	5 8	3 15
=	3	_		_		_	5 1	=	1 -81	1	$\frac{1}{3}$	_	5 8 28 1 8	34 1
	3					1	10		3	1	8	2	58	32 86
10	9	4	3		3	5	148	8	19	14	62	19	784	
4	7	2	1	_ 1	1	12	161	6	26	23	59	21		849

										TAE	BLE 3	53—
										ENG	LAND	AND
	1.	2. (3.	4.	5,	6.	7.	8.	9.	10.	11.	12.
Place or Cause of Accident.	Northumberland.	'n.	Cumberland and Westmorland.	hire and hire.	ire, South.	ire, West.	Nottinghamshire.	hire, North.	hire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South and Worcestershire.
	North	Durham	Cumbe	Lancashire Cheshire.	Yorkshire,	Yorkshire,	Nottin	Derbyshire,	Derbyshire,	Staffor	Cannoc	Staffor and V
									B. NU	MBER	OF PE	RSONS
Explosions of Firedamp or Coal Dust	6	2						2		2		
FALLS OF GROUND. At the working face	2,368	4,608	231	2,703	4,916	1,768	2,782	2,351	182	1,231	778	232
On roads while repairing or enlarging On roads while otherwise working	76	370	18	334	777	279	328	226	10	61	144	20
or passing	132 1	508	_10	291	411	171	145	168	11	52	54	_ 8
Total	2,577	5,486	259	3,329	6,104	2,218	3,255	2,745	203	1,344	976	260
SHAFT ACCIDENTS.	3									1		-
Overwinding		1	_		_	_ 2	7 2			_ 1	-	_
machinery	_	_	_	_ 2	2	2	_	_	_	1	_	_
Things falling down shaft Other shaft accidents	3 6	1 9	_	7 15	2 4	3 5	2 7	6 9	1	_	1 3	- 1
Total	12	11		24	8	12	18	15	1	2	4	1
UNDERGROUND HAULAGE		is .										
ACCIDENTS. Ropes or chains breaking	6	4	3	18	13	7	7	5	1	3	_	
Mechanical haulage	564 768	1,291 2,706	24 22	535 6	981 208	223 193	372 92	364 133	13 11	233	38 77	29 107
Hand haulage Runaway trams or tubs	231 18	856 39	140	567 84	1,032 40	459 13	353 32	336 26	10	119 18	99 17	25 2
Total Other haulage accidents	1,581 925	4,892 2,571	191 164	1,192 1,190	2,261 2,262	888 882	849 671	859 729	38 42	370 386	231 249	163 75
Total	2,512	7,467	358	2,400	4,536	1,777	1,527	1,593	81	759	480	238
MISCELLANEOUS UNDERGROUND By explosives	27	31	2	11	8	5	4	8	3	8	1	
Suffocation by natural gases By underground fires		1	=	- 2	_	_		_ 1	_	- 3	_]	_
Irruptions of water Electricity	1 3	- 3	1	1	- 1	_	_			- 1		- 1
By machinery Other accidents	238 2,206	349 3,991	15 237	288 2,975	531 5,173	155 1,591	129 3,245	108 2,437	13 125	115 1,289	69 1,098	215
Total	2,475	4,375	255	3,278	5,713	1,751	3,378	2,554	141	1,416	1,168	222
Total Underground	7,582	17,341	872	9,031	163,61	5,758	8,178	6,909	426	3,523	2,628	721
ON SURFACE. By machinery	40	114	3	56	115	53	50	40	4	24	15	4
On railways, sidings or tramways: While engaged in moving waggons	123	203	15	139	110	57	96	112	12	42	21	11
While engaged in coupling or uncoupling waggons	9	67	3	23	41	12	17	26	2	5	6	1
Run over while passing along or across railways or tramways	7	27	1	5	16	4	7	5	2			2
Crushed between waggons and structures	21	75		40		14	19	16	2		3	6
In other ways	76 236	505	23	111 318	126 347	64 151		56 215	22 22		15 45	17 37
Electricity Other accidents	481	969	43	495	806	323	341	348	23	149	175	38
Total on Surface	757	1,595	69	871	1,268	527	586	603	49	282	235	79
Grand Total	8,339	18,936	941	9,902	17,629	6,285	8,764	7,512	475	3,805	2,863	800
Corresponding figures for the Year	7,839	17,826	1,388	9,923	16,665	6,077	8,674	7,591	421	3,593	2,706	787
Estimated number of underground man-shifts worked in 1936 (thousands)	9,523 3,375	22,644 6,870			17,514 5,727	7,545 2,797	7,691 2,864	6,997 2,591	568 218		3,823 1,537	1,054 445

^{*} See Note † to Table 46. † Not including accidents primarily due to ropes or chains breaking.

GREAT BRITAIN.															
WALES.										SCOTI	LAND.		GREAT	1935.	
Leicestershire.	Warwickshire,	Shropshire,	Forest of Dean.	Bristol,	Somersetshire.	Kent.	South Wales and Monmouthshire,	North Wales, 12	Fife, Clackmannan, Kin-Rross and Sutherland.	Lothians (Mid. and East) and Peebles.	Lemarkshire, West Lothion (Linlithgow) Stir- & ling, Renfew and Dembarton.	Ayrshire, Dumfries of and Argyll.	Total Number of Persons disabled for more than 3 days.	Number of Persons seriously Injured.	Total Num- ber of Per- sons dis- abled for more than 3 days.
INJURE	INJURED WHO WERE DISABLED FOR MORE THAN 3 DAYS.														
							6		1	1	34	2	56	63	57
315 78	883 149	134 23	150 10	23 3	127 16	572 65	8,819 1,196	505 77	1,020 59	541 70	1,846 127	511 24	39,596 4,540	1,084 148	39,417 4,369
34	48	25	_ 7		5	37	803 2	32	40	5 6	120 3	22	3,190 8	104	3,200 6
427	1,080	182	167	26	148	674	10,820	614	1,119	668	2,096	557	47,334	1,336	46,992
_		_		_		_	14	_		decision and the second	12	_	39 3	42	27 3
= 1	=	_ 1	=	_	=	_ _ 1	$-\frac{2}{10}$				2 5 9		12 8 51	1 5 4	19 7 40
	1	1			1		7	3	23	4	17	9	125	8	100
	1	2	1		1	1	33	3	25	7	45	11	238	60	196
-	1	-	-	1	_	21	. 35	1	3	3	10	3	145	17	92
30 33 74 5 142 100	109 12 161 9 291 255	23 48 34 — 105 62	46 17 24 — 87 48	 1 4 1 6 11	6 6 44 1 57 31	138 — 53 7 198 185	628 870 681 36 2,215 2,150	80 8 77 4 169 207	145 4 123 12 284 336	78 6 133 9 226 229	219 49 657 37 962 873	78 4 177 15 274 214	6,247 5,381 6,469 434 18,531 14,847	253 121 122 94 590 133	6,172 5,368 7,134 477 19,151 15,003
242	547	167	135	18	88	404	4,400	377	623	458	1,845	491	33,523	740	34,246
3 - - - 28 443 474	98 1,303		4 			23 597 620	9 -1 1 2 490 7,236 7,739	32 517 550	11 - 1 70 1,251 1,333	- 3 36 689	23 1 - 8 156 2,197 - 2,385	- - - 45 650	175 2 7 3 25 3,000 40,089 43,301	191 2 33 111 247 584	192 10 11 2 34 2,351 38,597 41,197
1,143	3,034	513	596	62	396	1,699	22,998	1,544	3,101	1,870	6,405	1,761	124,452	2,783	122,688
7	11		5	_	3	_ 2	105	17	20	- 8	30	_ 8	734	35	650
15	30	1	3		1	24	230	36	42	32	90	27	1,472	63	1,596
3	3	1	1	_		3	51	4	7	1	8	2	296	11	293
2	3	-				_	24	2	1	3	8	4	123	12	120
6 9 35	7 19 62 —	2 5 9	4 8 	_	- 8 9	1 9 37	55 213 573 3	18 65	55 111 1	12 20 68	124	10 34 77	399 1,223 3,513 12	12 32 130 17	390 1,227 3,626 19
59	214	23	39	6	23	42		78	200	128		75	6,611	126	6,293
1.245	3,321	32 545	648	68	35 431	7 790	24 769	1,704	332	204	741	1,921	10,877	308	10,597
1,220	0,021	040	048	- 08	431	1,780	24,762	1,704	3,433	2,074	7,140		100,029	6,091	
1,146	3,027	511	541	139	434	1,773	-	1,576	3,833	2,105	6,746	1,990		3,231	133,285
1,604 578	3,186 1,342	618 198	1,290 267	101 35	736 202	1,632 344		2,100 709	5,150 1,755	2,868 1,074	9,857 3,244	2,627 856	152,55 4 50,522		149,640 49,118

TABLE 53—

II.—Metalliferous Mines (including the Stratified Ironstone Note.—For the Number of Separate Fatal

	1	Iron O	re and Iro			Other Mines under the Metalliferous Mines Regulation Acts.						
Place or Cause of Accident.	Coal	ler the Mines	Metall Mi Regu	fines Ore		Iron and stone nes.	At Tin	At Lead	At	At	All Non-ferrous Metalliferous Mines.	
- Acceptance	Cleve- land.	Lincoln- shire and North- ampton- shire.	Cum- berland and North Lanca- shire.	Else- where.	1936.	1935.	Mines in Corn- wall.	and Zinc Mines.	Slate Mines.	all other Mines.	1936.	1935
	A. NUMBER OF PERSONS KILLED.											
Explosions of Firedamp			_	_	_	1		_	_	-	_	_
FALLS OF GROUND. At the working face	1				1	8	1	1	2	1	5	9
On roads while repairing or enlarging	2				2	3		_		1	1	
On roads while otherwise working or passing In shafts		_	_		_	3		-	_			2
Total	3				3	14	1		2	2		11
SHAFT ACCIDENTS.												
Overwinding		_	_	_		_	=	_	=	_	_	
by machinery Falling into shaft from surface	=		_	_	=		_			_	_	
Falling from part way down Things falling into shaft from	_	_										1
Things falling from part way down					_	_				_	_	
Other shaft accidents												1
Total												3
ACCIDENTS. Ropes or chains breaking Run over or crushed by trams		- 1		_		_	_	_	_	_	_	-
Other haulage accidents	1				1							
Total	1	1			2							1
MISCELLANEOUS UNDER- GROUND. By explosives	1 -				1 - - - -	111111	= = = = = = = = = = = = = = = = = = = =		1 1	1 - - - 2	2 - - - 4	
Total	1	_			1		1	_	2	3	6	3
Total Underground	5	1		_	6	15	2	1	4	5	12	18
ON SURFACE. By machinery Boiler explosions On railways, sidings or tram-	=	=	=	=	=		=	=	_	=	_	_1
ways Electricity Other accidents	_	=	=	=			=		_			
Total on Surface					_	1			_	_		3
Grand Total	5	1			6		2	1	4	5	12	
Corresponding figures for the Year 1935	10	2	2	2	_	16	7	2	3	9		21
Estimated number of man- shifts worked in 1936 (thousands)	829	140	583	128	1,680	1,430	457	467	759	998	2,681	2,700

continued.

Mines in Cleveland, Lincolnshire and Northamptonshire).

and Non-fatal Accidents see Table 46

and.	Non-fa					46.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	promo									
	Iron Ore and Ironstone Mines.								Other Mines under the Metalliferous Mines Regulation Acts.								
Coal	er the Mines ect.	Metal Mi Regu	er the liferous ines llation cts.	Ironston	Ore and ne Mines. 036.	Total Number of	At Tin	At		At	All Non-ferrous Metalliferrous Mines. 1936.		Total Number of Persons				
Cleve- land.	Lincoln- shire and North- ampton- shire.	Cum- berland and North Lanca- shire.	Else- where.	Total Number of Persons disabled for more than 3 days.	Number of Persons seriously Injured*	Persons disabled for more than 3 days in 1935.	Mines in Corn- wall.	Lead and Zinc Mines.	At Slate Mines.	all other Mines.	Total Number of Persons disabled for more than 3 days.	Number of Persons seri- ously Injured*	disabled for more than 3 days in 1935.				
B. NUMBER OF PERSONS INJURED WHO WERE DISABLED FOR MORE THAN 3 DAYS.																	
						2							3				
167	27	44	10	248	12	206	36	28	35	62	161	14	124				
1	1	2	_	4	2	3		_	_	1	1	_	1				
4	_ 1	1 1	1	7	_ 1	_ 8	_ 5	_ 2		4	11	1					
172	29	48	11	260	15	217	41	30	35	68	174	15	135				
_		_	-	_		6	_	_	2		_ 2	_	_				
_						1							1				
}-					_	1	3	1		_	3		3				
}-	_				_		1	_		1	2		2				
		2		2	—	_	4	5		6	15	2	10				
		2		2		8	8	5	2	7	22	2	16				
43	15	23	8	89	3	87	11	26	9	13	59	3	33				
104	22	47	2 10	183	3	74	3 14	27 53	17	28 41	125	- 3	74				
			10	100		101		30		71	120		7.2				
_5	_ 2	1		8	8	6	1 1	3	4	4	12 1	13	13				
=	_		Ξ				1	_	_	Sharker M.			=				
221	27	2 75	 3 11	5 334	_		16 65	- 3 62	13 112	5 96	 37 335	17	11 359				
226	29	78	14	347	8	245	83	68	129	105	385	30	383				
502	80	175	35	792	26	633	146	156	183	221	706	50	611				
_3	_	6	_ 2	11		7	3	8	_ 8	7	26 1	2	18				
18	_ 6	15	1	40	2	27	3	12	25	24	64	3	42				
27	3	13	3	46	1	36	12	18	83	35	148	5	202				
48	9	34	6	97	3	70	18	38	116	67	239	10	262				
550	89	209	41	889	29	50x	164	194	299	288	945	60					
_426	45	209	23		44	703	148	158	282	285		48	873				

^{*} See opposite.

TABLE 53—

III.—Quarries more Note.—For the Number of Separate Fatal

	Ou	arries a	at which	the Pri	incipal M	ineral go	ot was	Great	Britain.
Place or Cause of Accident.	Iron- stone.	Lime- stone (other than Chalk &c.).	Sandstone	Slate	Igneous Rocks.	Clay	Other Mine-	1936.	1935.
			A. N	UMBER	OF PE	RSONS	KILLEI).	
INSIDE THE QUARRIES. (i.e., inside the actual pits, holes, or excavations.)									
Falls of Ground. From beyond the person's own working-place From the person's own working-place		2 2	2 2	3	2	2 7	6 3	17 15	14 11
Total	_	4	4	8	3	9	9	32	25
By Blasting. While charging or tamping From stones projected by shots, when persons had not taken sufficient	_	-		-	1		_	1	2
Shelter From miss-fire shots		2 2 1		_	1			3 2 1	
Total		5			2			7	3
During Descent or Ascent. Falling from paths, steps or ladders When descending or ascending by machinery Other accidents	_	1		- - 1	_	Normal Normal	_	1 -	1 -
Total		1		1		_		2	1
Miscellaneous. Ropes or chains breaking Machinery Boiler explosions On inclined and engine planes On railways, sidings or tramways Falling from ledges Electricity Other accidents Total								3 - 3 4 - 11 - 21	- 1 - 1 2 3 - 8 - 15
Total Inside Quarries	4	11	4	5	12	11	15	62	44
OUTSIDE THE QUARRIES. Machinery Boiler explosions On inclined and engine planes On railways, sidings or tramways Electricity Other accidents				1	1 1 1	_ 	2 1 2	4 2 4 4	2 - 2 -3
Total Outside Quarries Grand Total	4	13	4	6			20	76	7
Corresponding figures for the Year	*	11	4	2	11	12	11		51
Average Number of Persons em-	2 583							73,530	
£10,00 m 1000 m 11 m	2,000	0,0101	0,010	V,144	2,070	12,002	121122		

^{*} See Note † to Table 46.

continued.

than 20 feet deep.

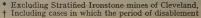
and Non-fatal Accidents see Table 51.

	Quarr	ies at which	the Princip	oal Mineral	got was		Great Brit	tain, 1936.	Total Number
Iron- stone.	Lime- stone (other than Chalk, &c.)	Sand- stone.	Slate.	Igneous Rocks.	Clay and Brick Earth.	Other Minerals.	Total Number of Persons disabled for more than 3 days.	Number of Persons seriously injured.	of Persons disabled for more than 3 day in 1935.
В. М	UMBER	OF PERSO	ns injur	ED WHO	WERE D	ISABLED	FOR MORI	E THAN 8	DAYS.
} 13	282	70	66	160	121	112	824	{ 21 43	} 626
13	282	70	66	160	121	112	824	64	626
enam.	1	_		2			3	3	12
_1 	13 5 4	2 1	$-\frac{1}{2}$	2 4	$-\frac{3}{2}$	$-\frac{2}{1}$	24 10 9	26 10 11	11 5 10
1	23	3	3	8	5	3	46	50	38
8	7	8	2	3	10	14	52	2	41
1	11	1	9	1 4	8	5	39 39	1	
9	18	9	11	8	18	19	92	3	54
1 11 1	1 34	2 21			1 13	4 46	9 159 1	 13	3 89
29 — 78	8 280 22 1 753	42 17 ———————————————————————————————————	2 49 4 — 374	149 6 	119 17 — 156	146 16 1 1 228	814 82 2 2,462	20 20 1 86	9 591 67 3
120	1,099	277	434	866	310	445	3,551	140	$\frac{2,512}{3,274}$
143	1,422	359	514	1,042	454	579	4,513	257	3,992
3	28	25	34	26	10	37	163	22	119
28	106	16	 4 77	57	4 57	53	10 394		261
28	190	132	318	214	100	92	1,074	2 42	1,165
59	326	173	433	297	172	183	1,643	88	1,554
202	1,748	532	947	1,339	626	762	6,156	345	
166	1,475	511	884	1,222	740	548	_	311	5,546

* See opposite.

Table 54.—Total Number of Persons Injured by Accidents at Mines to the Period of Disablement and the

				N	lajor In	juries.			
Period of Disablement.		F	ractures			Disloc	ations.		
	Thigh.	Leg.	Arm.	Rib.	Head.	Upper Ex- tremity.	Lower Ex- tremity.	Hernia.	Total.
				(i	i) MINI	es und	ER THE	COAL	MINES
Number of Persons Injured who were disabled for:— More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 13 weeks 6 weeks and under 13 weeks 13 weeks and under 26 weeks 26 weeks or longer Number of Persons who had not recovered from injury at end of year Total†	1 1 2 4 3 9 68	1 10 45 120 57 363 597	- 1 11 38 28 4 78	1 3 46 39 10 3 38	1 5 8 5 1 23 43	7 5 5 1 10	- 1 1 2 4 - 3	3 4 13 34 57 5 5 53	6 11 95 175 232 80 636
					1				
				(:	ii) MUN	ES UND	ER TH	E COAL	MINES
Number of Persons Injured who were disabled for :— More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 13 weeks 13 weeks and under 13 weeks 26 weeks or longer Number of Persons who had not recovered from injury at end of year Total†	7 3 2 15 49	1 10 48 82 25 281 448	34 111 39 10 76	2 35 26 11 1 25	2 6 4 6 - 17	4 2 9 5 2 — 11 33	1 1 4 1 - 3	1 7 18 43 37 3 42 151	6 14 120 244 180 54 504
				1					
N				(i	ii) MIN	ES UND	ER TH	E COAL	MINES
Number of Persons Injured who were disabled for:— More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 6 weeks 6 weeks and under 18 weeks 13 weeks and under 26 weeks 26 weeks or longer	1 -1 -1 -1 9 -12	1 16 18 7 40	8 29 15 1 33 86	1 8 10 3 1 4 27	- 1 1 - 3 5		1 -3 1 - 1 6	1 1 9 12 20 1 17	4 1 29 73 59 12 108 286
				(iv)	STRA'	PIFIED	IRONST	ONE MI	NES OF
Number of Persons Injured who were disabled for:— More than 3 days and under 8 days				(14)					
8 days and under 2 weeks 2 weeks and under 18 weeks 13 weeks and under 18 weeks 26 weeks and under 26 weeks 26 weeks or longer Number of Persons who had not recovered from injury at end of year		- 1 1 - 8	3						— 1 3 3 —
Total	_	10	3	2		_		6	21
			* Exc	luding	Stratifie	d Ironsto	ne mine	s of Cleve	eland.





and Quarries in Great Britain in the Year 1936, classified according Nature of the Injury received.

			1	Minor I	njuries.						
To Head.	To Eyes.	To Hand,	To Foot.	To Arm.	To Leg.	To Rib.	To Back,	Total.	Other In- juries.	Grand	Total.
	Dycs.	l'Iand.	1000.	71111.	Log.	IGD.	Dack.			1936.	1935
CT.*-	-Workers	at the Co	oal Face	(76,772,0	00 Man-sh	ifts worke	d in 1936)				
876 1,294 1,802 322 75 12	1,092 1,317 1,564 293 95 17	2,965 4,607 10,240 2,143 355 50	1,277 1,594 3,233 1,061 213 22	871 1,406 2,462 521 120 15	1,629 2,245 5,473 1,469 482 71	117 213 662 164 26 6	805 1,308 2,761 578 118 38	9,632 13,984 28,197 6,551 1,484 231	585 878 1,915 455 155 32	10,223 14,873 30,207 7,181 1,871 343	9,85 14,80 31,17 7,26 1,78
278	297	1,244	598	319	1,022	87	580	4,425	438	5,499	6,00
4,660	4,678	21,607	8,000	5,715	12,401	1,276	6,189	64,526	4,459	70,223	71,2
ACT.*-	-Other V	Vorkers I	Below Gr	ound (75,	782,000 M	Ian-shifts	worked in	1936).			
645 1,101 1,485 251 56 8	440 523 591 102 45 8	2,055 3,766 9,659 2,096 317 47	950 1,205 2,447 667 125 11	624 1,059 1,991 518 90 11	1,310 1,864 4,271 1,139 334 40	82 114 437 102 10 2	613 973 1,996 385 83 17	6,719 10,605 22,877 5,260 1,060 144	504 715 1,646 420 130 20	7,229 11,334 24,643 5,924 1,370 218	6,3 10,2 23,6 5,7 1,2
194	108	1,212	310	269	743	66	351	3,253	352	4,109	4,2
3,741	1,818	19,155	5,717	4,562	9,705	813	4,421	49,932	3,788	54,844	51,7
ACT.*-	Surface	Workers	(50,522,	000 Man-	shifts wor	ked in 193	36).			1	
107 127 212 45 11	85 119 152 37 10 3	418 718 1,918 490 73 11	202 226 580 154 26 5	120 142 376 93 27	203 296 751 205 57 5	16 21 76 33 2	96 124 278 66 13	1,247 1,773 4,343 1,123 219 26	84 118 254 95 28	1,335 1,892 4,626 1,291 306 38	1,3 1,9 4,5 1,2
1	27	214	75	66	125	10	41	588	72	768	8:
30	47	217									
	433	3,843	1,268	827	1,643	158	619	9,324	652	10,262	10,28
30 533	433	3,843	1,268	827	1,643		619			10,262 d in 1936.	
30 533	433	3,843	1,268	827	1,643	158	619				
30 533 CLEVE	433 LAND, 1	3,843 LINCOLN 18 40 93 23 9	1,268 SHIRE A	827 AND NOI - 2 10 27 5	1,643 RTHAMPT 5 19 35 15	2 1 10	619 E. (969,0	00 Man-sh 43 111 275 66 16	ifts worke	d in 1936. 46 120 295 78 21	2

Lincolnshire and Northamptonshire. See Section (iv), was not known.

TABLE 54—

Number of Persons Injured who were disabled for:										
Period of Disablement.					Majo	r Injur	ies.			
Thigh. Leg. Arm. Rib. Head Ex- Ex-	Period of Disablement.		Fr	actures.			Disloc	cations.		
Number of Persons Injured who were disabled for: More than 3 days and under 8 days		Thigh.	Leg.	Arm.	Rib.	Head.	Ex-	Ex-	Hernia.	Total.
Misabled for:							(v) IRO	N MINES	UNDE	R THE
Number of Persons Injured who were disabled for:— More than 3 days and under 8 days 8 days and under 13 weeks 2 weeks and under 13 weeks 3 days and under 13 weeks 4 2 - 1 2 - 2 11 13 weeks and under 6 weeks 1 1 9 26 weeks or longer. Number of Persons who had not recovered from injury at end of year Total†	disabled for :— More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 6 weeks 6 weeks and under 13 weeks 13 weeks and under 26 weeks 26 weeks or longer. Number of Persons who had not recovered from injury at end of year			=		-	=======================================			4
More than 3 days and under 8 days 8 days and under 8 days 8 days and under 2 weeks						(vi	OTHE	R MINE	S UNDE	R THE
More than 3 days and under 8 days 8 days and under 8 days 8 days and under 2 weeks				(1
Number of Persons Injured who were disabled for:— Number of Persons Injured who were disabled for:— Number of Persons who had not recovered from injury at end of year Number of Persons Injured who were disabled for:— Number of Persons who had not recovered from injury at end of year Number of Persons who had not recovered from injury at end of year	disabled for :— More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 13 weeks 13 weeks and under 13 weeks 13 weeks and under 26 weeks 26 weeks or longer. Number of Persons who had not recovered from injury at end of year	-	6	2 1 1 2			=			11 9 1
More than 3 days and under 8 days							(vii) l	RONSTO	NE QUA	ARRIES
More than 3 days and under 8 days	Number of Degrees Takened asks are									
Number of Persons Injured who were disabled for:— More than 3 days and under 8 days 8 days and under 2 weeks ——————————————————————————————————	disabled for :— More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 13 weeks 13 weeks and under 26 weeks 26 weeks or longer. Number of Persons who had not recovered from injury at end of year					= = = = = = = = = = = = = = = = = = = =	= = - 1			2
disabled for:— More than 3 days and under 8 days — — — 1 — — — 1 2 1 3 3 3 4 2 1 4 3 4 4 2 1 4 3 4 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 3 9 6 5 2 14 5 — 4 2 13 96							(⊽.	iii) OTH	ER QUA	ARRIES
	More than 3 days and under 8 days 8 days and under 2 weeks 2 weeks and under 6 weeks 6 weeks and under 13 weeks 13 weeks and under 26 weeks 13 weeks or longer	6	21 21 10 52	14 5 5 14	10 10 1 1		- 4 1 4		11 10 1 13	36 62 40 20 96
	State Control of the									

† Including cases in which the period

continued.

Minor Injuries. Other Grand Total. To To To To To To To T												
To To To To To Arm. To To To Rib. Back. Total. Justes. 1936. 1935. 1936. 1935.					Mino	or Injuries						
		To Eyes.	To Hand.	To Foot.		To Leg.	To Rib.	To Back,	Total.	In-	Grand !	Total.
The image is a second color of the image is a second color o											1986.	1935.
## A	META	LLIFER	OUS MII	NES REC	GULATIO	N ACTS.	(711,000) Man-shif	ts worked	in 1936.)		
The image is a continuous labeled with the image is a c		3	13 41 8	10 14	4	7 18 6	- 2	4 11 2	47 102 23 4	7	50 111 26 6 1	43 107 33 4 1
METALLIFEROUS MINES REGULATION ACTS. (2,681,000 Man-shifts worked in 1936.) 10												
10	18	10	82	36	15	40	4	21	226	14	250	232
42	META	LLIFER	ous min	VES REC	BULATIO	N ACTS.	(2,681,0	00 Man-sh	nifts worke	ed in 1936.)	
NORE THAN 20 FEET DEEP. (2,583 persons employed in 1936.) 1	12 42 7 2	14 6 1	90 190 35	16 43 5	15 29	24 57 18		33	178 405 77 20	12 23 5	436 93 30	198 387 85
MORE THAN 20 FEET DEEP. (2,583 persons employed in 1936.) 1	7	3	22	6	4	10	2	4	58	4	72	57
1	81	36	396	80	63	130	13	53	852	53	945	873
1	MORE	THAN	20 FEE	T DEEP	. (2,583	persons e	mployed i	n 1936.)		1	·	
MORE THAN 20 FEET DEEP. (70,947 persons employed in 1936.) 51	6 3 —	1	11 34 9 2	1 1	3 10	27 2 1 —	2	3 1 —	32 96 21 5	= 7	37 104 22 6 1	34 82 17 7 1
51 88 268 83 70 101 6 53 720 40 761 672 71 118 470 120 125 139 12 69 1,124 66 1,192 1,034 122 132 968 320 217 430 63 166 2,418 194 2,648 2,417 30 30 209 92 36 136 18 40 591 44 697 663 12 15 40 7 9 29 1 113 18 171 147 5 4 7 4 1 5 26 1 47 37 28 44 90 37 16 58 2 19 294 39 429 402	15	8	67	22	15	42	6	8	183	14	202	166
30 30 209 92 36 136 18 40 591 44 697 663 12 15 40 7 9 29 — 1 113 18 171 147 5 4 7 4 1 5 — — 26 1 47 37 28 44 90 37 16 58 2 19 294 39 429 402	MORE	THAN	20 FEE	T DEEP	. (70,94	7 persons	employed	in 1936.)	1			
	30 12	118 132 30 15	470 968 209 40	120 320 92 7	217 36 9	139 430 136 29	12 63	69 166 40	1,124 2,418 591 113	66 194 44 18	2,648 697 171	1,034 2,417 663 147
320 432 2,054 664 474 899 101 349 5,293 403 5,954 5,380	28	44	90	37	16	58	2	19	294	39	429	402
	320	432	2,054	664	474	899	101	349	5,293	403	5,954	5,380

of disablement was not known.

Table 55.—Number of Persons killed and injured by Accidents, and the number killed and injured per 1,000 persons employed at Mines in Great Britain under the Coal Mines Act (except Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire) during the Year 1936, classified according to Age.

			Employe ound Ag					Employe round Ag		-
Inspection Division.	Under 16 years.	16 and under 18 years.	18 and under 20 years.	20 years and over.	All Ages.	Under 16 years.	16 and under 18 years.	18 and under 20 years.	20 years and over.	All Ages
				(a) Nu	mber of	Persons	Killed.			
Scotland Northern Yorkshire North Midland North Western Cardiff and Forest	3 7 6 2 1	6 2 6 3 1	3 6 8 1 2	88 120 163 68 56	100 135 183 74 60	2 2 — —	1 	_ _ _	11 4 9 3 8	10
of Dean	1 3 1	5 1	7 3 —	62 59 32	75 66 33	1	1	_	7 3 5	
All Divisions:	24	24	30	648	726	5	2	1	50	55
1935	25	23	26	689	763	5	5	3	73	81
		(b) Num	ber of P	ersons Ir	njured ar	nd Disabl	ed for n	ore than	3 Days	•
Scotland Northern Yorkshire North Midland North Western	232 1,582 1,009 421 340	569 2,324 1,210 640 535	603 1,721 876 516 422	11,733 20,168 19,024 15,079 12,801	13,137 25,795 22,119 16,656 14,098	218 459 179 112 87	208 382 184 115 102	92 180 108 71 76	919 1,400 1,324 1,042 1,048	1,43 2,42 1,79 1,34 1,31
Cardiff and Forest of Dean Swansea Midland and Southern	680 320 152	1,095 497 209	948 481 230	12,263 7,310 8,462	14,986 8,608 9,053	53 41 37	93 38 46	60 37 37	826 668 635	1,03 78 75
All Divisions:	4,736	7,079	5,797	106,840	124,452	1,186	1,168	661	7,862	10,87
1935	4,873	6,034	6,319	105,462	122,688	1,151	966	683	7,797	10,59
	(0) Numbe	er of Per	sons Kill	ed and I	njured pe	er 1,000	Persons :	Employe	d.
Scotland	213 387 272 273 217	184 325 216 229 183	156 298 187 161 158	196 189 199 218 206	193 209 202 217 203	96 135 86 84 75	99 126 93 84 65	56 94 74 61 60	61 52 53 54 52	6 6 5 5 5
Cardiff and Forest of Dean Swansea Midland and Southern	236 232 214	227 213 176	220 199 176	210 230 208	213 227 206	113 91 58	132 93 74	112 106 61	69 87 53	7 8 5
All Divisions:	279	237	205	204	208	101	99	74	57	6
1935	254	222	203	201	204	97	95	73	57	6.

Table 56.—Number of Persons Injured by Accidents at Mines under the Coal Mines Act from 1908, so far as particulars are available, distinguishing the Principal Causes.

Number of	Persons Injured per 1,000 Persons Employed.		148.1	153.8	164.8	168.8	170.0	181.4	176.2	161.3	152.1	153.5	166.6	171.6	174.8		5.5	4.8	3.8	4.1	4.1	4.4	4.4	4.0	3.8	3.9	3.7	4.0	4.2
Total	Below and Above Ground.		154,293	168,026	189.797	154.263	161,790	175,899	166,281	141,471	125.874	122,419	132,859	133,756	135,968		5.729	4,928	4,397	4,764	3,744	4,163	4,228	3,812	3,305	3,212	2,924	3,216	3,257
Ground.	Other Accidents.		7,400	9,254	11.283	7,810	8,347	800'6	8,437	6,941	6,315	6,390	7,114	6,993	7,397		534	476	404	383	236	285	273	217	196	210	188	196	183
Above Ground	Railways, Sidings or Tramways.		3,987	3,972	4,348	3,487	3,522	3,721	3,488	3,551	3,153	3,094	3,153	3,639	3,537		192	175	166	161	125	134	128	125	113	123	62	102	105
	Total Below Ground.	injured.*	142,906	127 835	174.166	142,966	149,921	163,170	154,356	130,979	116,406	112,935	122,592	123,124	125,034	injured.‡	5,003	4,277	3,827	4,220	3,383	3,744	3,827	3,470	2,996	2,879	2,639	2,918	2,969
	Other Mis- cellaneous Accidents.	of Persons in	45,943	04,717	62.267	49,137	51,542	59,134	54,717	43,638	36,655	36,429	41,233	41,361	43,556	seriously	920	602	765	854	629	269	724	689	507	527	483	602	623
ound.	Haulage Accidents.	Number	40,766	33,953	46,982	39,402	41,659	41,640	41,142	37,975	34,595	32,216	33,733	34,352	33,649	(b) Number of Persons	1,443	1,305	1,117	1,242	296	1,081	1,052	1,002	873	826	716	730	763
Below Ground	Shaft Accidents.	(a) Total	813	627	1,012	334	520	378	348	202	223	158	247	196	238	(b) Numbe	198	135	96	114	65	86	94	31	99	35	48	111	74
	Falls of Ground.		55,218	48.970	63,794	53,992	56,130	61,910	58,026	49,068	44,824	44,068	47,286	47,156	47,535		2,244	1,989	1,721	1,885	1,615	1,789	1,837	1,620	1,449	1,381	1,319	1,376	1,442
	Explosions of Firedamp or Coal-dust.		991	103	111	101	70	108	123	96	109	64	93	29	56		198	139	128	125	107	79	120	128	101	110	73	66	63
	Period or Year.		1908-1912	1918-1922+	1923-1927+	1928-1932	:	:		:	:	:	:	:	:		1908-1912	1913-1917	1918-1922‡	1923-1927†	1928-1932	:		:		:	:	:	: :
	Per		Icuran	Average 4	0		1928	1929	1930	1931	1932	1933	1934	1935	1936			Annual	Average 4			1928	1929	1930	1931	1932	1933	1934	1935

* In 1924 and subsequent years accidents which disabled the person injured for more than 3 days were reportable, the limit in 1928 and earlier years being 7 days.

† Excluding in Section (a) the years 1915-18, for which particulars are not available, and in Sections (a) and (b) the years 1921 and 1926, which were affected by prolonged stoppages of k. See Note † to Table 46.

TABLE 57.—Number of Cases of Accident and Disease* in respect of which Compensation was Paid under the Workmen's Compensation Acts, and the Amount of Compensation paid in the Mining and Quarrying Industries from the Year 1908, so far as particulars are available.

	Assertant		Number of	of Cases.		Amou	int of Comp	ensation	Paid.	
Year.	Average Number of	Acc	idents.	Dis	seases.	Acci	idents.	Di	seases.	Total Amount
I car.	Persons Employed.	Fatal Cases.	Disable- ment Cases.†	Fatal Cases.	Disable- ment Cases.	Fatal Cases.	Disable- ment Cases.†	Fatal Cases.	Disable- ment Cases.	Paid.
					ı	lines.				
1908 1909 1910 1911	1,047,862 984,994 1,072,571 1,059,642 1,086,113	1,301 1,456 1,347 1,711 1,246	137,622 154,798 166,709 178,466 167,959	-3 -1 2	1,689 2,730 3,783 5,026 5,949	226,226 237,308 220,973 281,183 202,367	601,848 724,269 818,302 905,999 897,090	£ 493 - 24 439	13,382 26,795 42,507 68,017 85,831	841,45 988,86 1,081,78 1,255,22 1,185,72
1913 1914 1915–8	1,114,210 1,046,357	1,312 1,768	195,387 179,899	— Part	7,478 8,928 iculars are	227,418 307,035 not availab	1,010,637 1,024,054		113,203 164,833	1,351,25 1,495,95
1919 1920	1,184,038 1,249,884	1,248 1,231	134,991 134,738	. 1	9,174 9,407	271,051 274,727	1,250,096 1,711,674	200	225,422 343,094	1,746,76 2,329,57
1921 1922 1923 1924 1925	1,109,023 1,122,511 1,214,660 1,202,597 1,157,085	833 1,067 1,282 1,265 1,235	103,784 201,370 245,479 214,171 197,388	-1 1 2 3	8,711 12,585 15,768 15,504 15,779	184,464 232,009 280,357 348,830 375,642	1,677,110 2,605,300 2,935,172 2,352,447 2,290,134	300 189 547 115	395,637 587,295 594,943 674,390 609,656	2,257,51 3,424,60 3,810,66 3,376,21 3,275,54
1926 1927 1928 1929 1930	772,883 1,052,216 944,666 930,780 933,813	787 1,129 1,073 1,161 1,123	117,252 118,978 185,823 196,851 190,745	5 2 3 3 2	13,187 15,273 14,772 16,126 16,847	228,767 354,696 324,211 333,664 333,188	1,945,489 2,170,878 2,199,485 2,227,126 2,162,192	1,297 249 992 829 611	540,726 488,338 501,990 488,207 505,458	2,716,22 3,014,16 3,026,62 3,049,82 3,001,44
1931 1932 1933 1934 1935 1936‡	862,314 807,848 781,361 784,643 770,091 765,040	996 907 901 906 1,235 871	170,887 154,355 147,441 158,8 5 2 161,509 161,858	1 5 1 3 2 2	16,828 16,016 15,208 15,184 15,264 14,862	308,512 272,232 278,972 276,034 376,141 270,251	2,092,452 2,007,389 1,868,117 1,937,489 2,070,726 2,161,091	220 1,049 300 1,040 516 643	540,005 504,549 426,307 445,089 445,050 438,149	2,941,18 2,785,2 2,573,69 2,659,63 2,892,43 2,870,13
					Qu	arries.				
1908 1909 1910 1911 1912	85,475 88,880 90,318 91,957 84,703	88 83 91 83 64	5,284 5,536 5,823 5,817 5,440	1 	2 1 2 2 2 2	11,501 12,072 11,199 11,177 8,665	23,056 28,586 35,056 38,274 39,143	230	11 2 4 149 5	34,78 40,66 46,28 49,66 47,81
1913 1914	87,541 82,709	66 83	6,001 5,674		5 1	8,638 11,799	35,855 35,435	_	36 2	44,55 47,25
9158 919 920	49,235 68,792	34 56	2,973 4,151	Parti	culars are	not availab 6,897 12,010	35,768 53,169	_	9 52	42,67 65,23
1921 1922 1923 1924 1925	62,722 62,781 68,979 74,771 76,274	42 35 49 57 89	3,687 3,897 5,292 6,359 6,742		1 1 7 9 5	9,238 8,422 11,162 14,512 29,194	55,929 63,159 72,408 72,610 78,506		4 14 70 35 54	65,17 71,59 83,6 87,13 107,73
1926 1927 1928 1929 1930	77,791 76,017 73,691 79,430 73,599	62 61 52 60 72	6,267 6,575 6,638 6,926 6,657		6 22 5 14 9	17,318 18,349 14,403 17,056 21,901	80,173 87,451 78,830 83,029 85,341		35 83 28 64 158	97,55 105,86 93,26 100,1 107,46
1931 1932 1933 1934 1935 1936‡	72,639 70,401 61,847 65,597 65,918 70,816	51 50 44 46 68 65	6,530 5,656 5,199 5,910 6,447 6,983		15 17 15 21 27 36	14,063 16,996 14,197 15,974 18,487 17,253	184,724 74,655 75,778 75,090 86,659 94,051		98 322 208 315 503 901	98,88 91,93 90,18 91,33 105,64 112,20

^{*} Excluding cases resulting from Schemes made under Section 47 of the Workmen's Compensation Act, 1925, and the Workmen's Compensation (Silicosis and Asbestosis) Act, 1930. † Including cases where the payment for compensation was continued from the previous year. This circumstance largely accounts for the smaller number of accident disablement cases shown in the preceding Tables, which relate only to cases reported during the year. ‡ Provisional figures.

Table 58.—Number of Cases of Disease* amongst Miners for which Compensation under the Workmen's Compensation Acts was paid from 1908, so far as particulars are available.

Nature of Disease.			Avera		1928	1929	1930	1931	1932	1933	1934	1935	1936‡
						(i)	NEW (CASES.					
Nystagmus§ Subcutaneous Cellulitis of the hand (beat hand)	944 718		3,225 980	3,097 1,422	2,554 1,349	2,577 1,708	3,066 1,448	2,729 1,289	1,962 1,266	1,535 1,238	1,745 1,200	1,839 1,189	1,507 1,191
Subcutaneous Cellulitis or Acute Bursitis: Arising at or about the knee	1 042			2,542	2,644	3,406	3,554	3,147	3,076	3,111	3.68 6	4.149	4,445
(beat knee)	91	1,620 151	1,421 158	311	392	458	441	451	403	435	554	581	621
and tendon sheaths	122 6 9	187 3 11	119 - 9	181	227 — 15	316 — 35	298 — 37	327 — 53	317 — 44	366 — 48	328 70	358 105	347 99
				(ii) CAS	SES CO	NTINUI	ED FRO	M PRE	vious	YEAR.			
Nystagmus§ Subcutaneous Cellulitis of the	816	2,684	4,319	7,682	7,264	7,263	7,572	8,353	8,523	8,068	7,174	6,591	6,093
hand (beat hand) Subcutaneous Cellulitis or Acute Bursitis :	32	50	62	143	112	134	138	129	132	112	112	120	101
Arising at or about the knee (beat knee) Over the elbow (beat elbow) Inflammation of the synovial	42 6	76 4	75 15	140 17	174 17	175 35	228 32	278 38	231 24	207 34	219 46	225 40	302 54
lining of the wrist joint and tendon sheaths Ankylostomiasis	_5	10	5	_12	15	_13	16	14	15	_24	15	16	_27
Other diseases	2	1	2	6	12	9	19	21	28	31	38	53	77
					(iii) T	OTAL 1	NUMBE	R OF	CASES.				
Nystagmus§ Subcutaneous Cellulitis of the	1,760	5,271	7,544	10,779	9,818	9,840	10,638	11,082	10,485	9,603	8,919	8,430	7,600
hand (beat hand) Subcutaneous Cellulitis or Acute Bursitis :	7 50	869	1,042	1,565	1,461	1,842	1,586	1,418	1,398	1,350	1,312	1,309	1,292
Arising at or about the knee (beat knee) Over the elbow (beat elbow) Inflammation of the synovial	1,085 7	1,696 155	1,496 173	2,682 328	2,818 409	3,581 493	3,782 473	3,425 489	3,307 427	3,318 469	3,905 600	4,374 621	4,747 675
lining of the wrist joint and tendon sheaths Ankylostomiasis	127 6	197 3	124	193	242	329	314	341	332	390	343	374	374
Other diseases	11	12	11	35	27	44	56	74	72	79	108	158	176

^{*} See note * to Table 57.

† Excluding the years 1915-18, for which particulars are not available, and the years 1921 and 1926, which were affected by prolonged stoppages of work.

† Provisional figures.

† In July, 1913, the reference to "Nystagmus" in the Third Schedule of the Workmen's Compensation Act, 1906, was amended so as to cover "the disease known as miners' nystagmus whether the symptom of oscillation of the eyeballs be present or not."

Table 59.—Number of Prosecutions, Convictions and Total Amount of Fines and Costs imposed for Offences at Mines and Quarries committed during the Year 1936.

(i)	MINES.

(1) INLEY	143.				
Nature of Offence.	Prosecutions (i.e., No. of separate charges.)	Con- victions.	Charges with- drawn or not proven.	Charges dis- missed.	Total Amount of Fines and Costs imposed.
A. Owners, Agents, Manager	s and Und	er Manag	ers.*		
Management Ventilation Safety Lamps Shafts Boreholes and working near water Machinery Prevention of coal dust Accidents Employment of boys, girls or women	2 2 3 7 5 5 18 2	1 1 2 4 3 3 18 2	1 - 1	1 1 3 2 1 —	£ s. d. 5 0 0 10 0 0 4 10 0 22 5 0 21 6 0 14 6 6 38 2 0 11 0 0 10 0 0
First Aid Regulations	13	13			70 5 0
Total in 1936	60	48	2	10	206 14 6
Total in 1935	99	70	16	13	149 10 0
B. Under Officials	and Work	men.			
	1			1	1
Interfering with the ventilation Contraventions of provisions as to:— Safety Lamps Matches and smoking Explosives. Timbering Trawns or Tubs (underground haulage). Travelling on haulage roads, travelling or working on roads or in working places not made secure Offences connected with the inspection of shaft or workings Wilfully damaging, removing or interfering with apparatus, etc., or wilfully defacing notices, etc. Disobeying orders Being about the mine in a state of intoxication.	2 5 61 39 12 28 8 1 16 10 4	2 4 57; 35 11 20 7 1 15 9 4	- 1 2 8 - - - 1	1 3 2 1 1 - 1 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	£ s. d. 6 1 0 7 10 0 62 8 6 62 12 6 17 2 0 26 16 0 6 15 0 0 5 0 24 0 9 12 13 0 7 5 10
Sleeping in the mine Carrying timber, parts of machines, tools, etc., while ascending the shaft in a cage Behaving in a violent or disorderly manner Contraventions of rules as to care and treatment of animals, or cruelty to animals† Entering or working in an unauthorised part of the mine Endangering life and limb Riding ponies underground Employment of boys in moving railway wagons Boarding or leaving a train when in motion Stealing signalling wire Total in 1936	22 50 3 27 21 6 1 5 1	21 43 3 27 19 6 -5 1	1 2	5 2 1 - 17	7 5 0 11 15 0 64 13 0 7 10 0 15 17 0 37 5 0 4 0 0 1 0 0 382 14 7
Total in 1935	261	225	11	25	296 4 10

Imposed.

In addition, two prosecutions, involving four charges, were instituted against the occupiers of quarries for offences against the Factory and Workshop Act, three for "Failure to Fence Machinery" and one for "Failure to give notice of Occupation." Two charges relating to machinery were dismissed. The remaining charges resulted in convictions and penalties amounting to £6 2s. 0d. were imposed. There was also one prosecution under the Employment of Women, Young Persons and Children Act, 1920, involving three charges against the occupier of a quarry for "Employing boys on night-shifts," which resulted in three convictions. Penalties amounting to £20 5s. 0d. were imposed.

^{*} The number of mines to which these proceedings related was 11 in 1936 and 5 in 1935.

† In addition, there were seven prosecutions of workmen under the "Protection of Animals Act," resulting in six convictions. Penalties amounting to £23 16s. 9d. were imposed.

† Two offenders were sentenced to imprisonment for one month and 21 days, respectively.

(ii) QUARRIES.—There was one prosecution under the Quarries Act, involving two charges each against the owner and a foreman of a quarry for breaches of Special Rules 32, 33 and 56, relating to "Blasting." One conviction was obtained against the owner (Rule 33) and penalties amounting to £18 12s. 0d. were imposed. The remaining charges were either withdrawn or dismissed. There was also one prosecution involving one charge, under the Metalliferous Mines Regulation Act as applied to Quarries, against the owner of a quarry for "Failure to Render Annual Return of Non-fatal Accidents." Penalties amounting to £15 10s. 0d. were imposed.

Table 60.—Results of Examinations for Firemen's, Examiners' and Deputies' Certificates and Shotfirers' Certificates, in the Year 1936.

Note.—Subsection 1 of Section 15 of the Coal Mines Act, 1911, provides that after the first day of January, 1913, a person shall not be qualified to be appointed or to be a fireman, examiner, or deputy, unless he:—

3, a person shall not be qualified to be appointed or to be a fireman, examiner, or deputy, unless he:—
(a) is the holder of a first or second class certificate of competency under this Act or is twenty-five years of age or upwards and has had at least five years' practical experience underground in a mine, of which not less than two years have been at the face of the workings of a mine; and
(b) has obtained a certificate in the prescribed form from a mining school or other institution or authority approved by the Secretary of State as to his ability to make accurate tests (so far as practicable with a safety lamp) for inflammable gas, and to measure the quantity of air in an air current and that his hearing is such as to enable him to carry out his duties efficiently; and
(c) has within the preceding five years obtained from such approved school, institution, or authority as aforesaid, or from a duly qualified medical practitioner, a certificate in the prescribed form to the effect that his eyesight is such as to enable him to make accurate tests for inflammable gas and that his hearing is such as to enable him to carry out his duties efficiently, the expense of obtaining which shall in the case of a person employed at the time as fireman, examiner or deputy, be borne by the owner of the mine. by the owner of the mine.

Shotfirers.—The Explosives in Coal Mines Order provides that in mines in which permitted explosives are required to be used no person shall be qualified to be appointed a Shotfirer unless, having other qualifications, he has obtained the like certificates as to his ability to make accurate tests for inflammable gas and as to his eyesight as are required in the case of firemen, examiners or deputies.

The provisions as to gas testing and eyesight certificates are not applicable to persons employed in mines in which inflammable gas is unknown.

Particular of the recent of the Examinations under Subsections 1. (b) and 1. (c) of Section 15 of the Coal

Particulars of the results of the Examinations under Subsections 1 (b) and 1 (c) of Section 15 of the Coal Mines Act, 1911, held during the year 1936 are as follows:—

INSPECTION DIVISION

			II	NSPECTIO	ON DIVIS	SION.			
	Scotland	Northern	York- shire	North Midland	North Western	Cardiff and Forest of Dean	Swansea	Midland and Southern	Great Britain.
		RESULT (
Number of Candidates presenting themselves for examination	485	1,005	456	257	295	350	116	344	3,308*
Number who passed in— All Subjects for Full Certificate Subjects qualifying them to act as Firemen at Mines where	461	851	381	197	264	246	102	183	2,685
gas is unknown, viz., Air Measuring and Hearing	_	1	_	3	2	6	-	12	24
Subjects qualifying them to act as Shotfirers, viz., Gas Testing	2	8	1	_	8			77	96
Total	463	860	382	200	274	252	102	272	2,805
Number who failed in the following subjects:— Gas Testing Hearing	4 15 2 - 1	39 -79 -22 -5	6 65 3 —	14 36 7 —	4 1 13 2 - 1	37 36 19 6	13 1 - -	14 1 41 16 —	118 2 298 72 5 1
Total	22	145	74	57	21	98	14	72	503
	B.—R	E-EXAMI LND DEP	NATION UTIES' C	OF PERS	ONS HOL	LDING FI	REMEN'S SHOTFI	S, EXAMI RERS).	NERS'
Number of Candidates Re-examined Number who passed	50 50	12 12	36 36	67 63	336 335	1 1	6 6	108 107	616 610
Number who failed to pass in :— Eyesight				4	11			1	6
Total	-	-		4	1		-	1	6

Of these candidates, 123 were re-admitted to subsequent examinations. Having passed in one or more subjects at on examination they were allowed to take the subjects in which they had failed at a subsequent examination.

TABLE 61.—Numbers of Candidates who Attended the Examinations for Certificates of Competency and for Surveyors' Certificates in 1936, the Numbers who Passed, and the Percentages of Passes

oj Pi	<i>1</i> 331	, s ,										
			Wr	itten T	est.		ral Tes	t.	Whole	Examina	tion.	
Examina Centr			Attend-	Qualified.		Attend ed.	Qualified.		Qualified and Recom- mended	Qua	ed but alified Re- nation in	
			ea.	No.	Per- centage.	eu.	No.	Per- centage.	for Certificate.	One or Tw Written Papers.	Test	
				(a) Examinations for First-Class (Manager's) Certificates.								
Edinburgh Newcastle Sheffield Wigan Cardiff			43 28 72 14 54 28	13 11 25 3 19	30 39 35 21 35 43	15 11 25 3 21 12	13 11 23 3 21	87 100 92 100 100 92	9 6 14 2 15 7	1 1 1		
			*239	83	35	†87	82	94	53	3	1	
			(b) Examinations for Second-Class (Under-Manager's) Certi								es.	
Edinburgh Newcastle Sheffield Wigan Cardiff Birmingham Total			29 36 105 24 37 17 248	13 18 46 8 15 7	45 50 44 33 41 41	13 18 47 8 15 7	12 17 42 8 15 6	92 94 89 100 100 86	10 9 29 6 10 4	- 1 - 1 2		
					c) Fram	instions	for Wis	ne Curror	ors' Certific	ntos	1	
				Vritten				al and Pra Tests.		w	hole ination,	
			Attend-		Qualified		Attend-	Qu	alified.	Gra	fied and inted ficates.	
		ed.	No		er- tage.	ed.	No.	Per- centage.	No.	Per- centage		
Edinburgh Newcastle Sheffield Wigan Cardiff Birmingham			40 29 41 16 17	1	0	28 34 37 31 24 29	13¶ 8 14 4 3 6	11 7 10 3 2 5	85 87 71 75 67 83	10 8 12 4 2 2	25 28 29 25 12 29	
Total			150	4	7	31	48¶	38	79	38	25	

^{*} Including 8 attendances for re-examination in one written subject (Surveying).
† Including 3 attendances for re-examination in the oral test and one attendance for a "deferred" test.
† Including 2 attendances for re-examination in written subjects, viz., one for Machinery and one for Surveying.

§ Including 2 attendances for re-examination in the oral test.

¶ One candidate attended an Oral (deferred) Test only.

Note.—Mine Surveyor Candidates do not invariably take the Written and the Oral and Practical Tests at the same Centre.

Table 62.—Numbers of Candidates who were Examined by the Board for Mining Examinations for Certificates of Competency and for Surveyors' Certificates, and the Numbers who passed in each Year from 1913.

			Cert	Surveyor	Surveyors Certificates.						
Year.		Fir	st Clas	s.	Sec	ond Cla	ass.	burveyors continuates.			
		Number of	Passes.		Number of	Pa	asses.	Number of	Pa	asses.	
		Candidates.	No.	Per- centage.	Candidates.	No. Per- centage.		Candidates.	No.	Per- centage	
1913 1914 1915 1916 1917 1918 1920 1921* 1922 1923 1924 1924 1926* 1928 1929 1930 1931 1933		211 212 273 327 402 450 639 407 668 737 681 606 359 450 415 387 377 294 284	71 75 87 97 134 120 157 205 152 206 230 189 198 111 154 107 121 105 67	26·5 35·5 41·0 35·5 41·0 29·9 34·9 32·1 37·3 30·8 31·2 27·8 32·7 30·9 34·2 25·8 31·3 27·9 23·6	545 472 424 409 469 463 526 666 511 685 778 744 642 385 540 412 340 338 325 306	165 169 185 189 187 151 178 229 209 238 209 188 149 105 195 121 128 108 99 101	30·3 35·8 43·6 46·2 39·9 32·6 33·8 34·4 40·9 34·7 26·9 25·3 27·3 36·1 29·4 37·6 32·0 30·5 33·0 37·2	199 177 111 139 137 132 264 375 112 195 223 312 185 302 286 271 256 210 189	51 94 65 68 63 67 99 113 30 24 36 36 37 41 55 52 37 41	25·6 53·1 58·6 48·9 46·0 50·8 37·5 30·1 26·8 12·3 16·1 11·5 18·7 14·1 11·2 14·5 17·2 14·5 17·7	
1934 1935 1936		307 240 243	67 59 53	21·8 24·6 21·8	305 278 250	72 66 68	23·6 23·7 27·2	219 177 151	35 29 38	16·0 16·4 25·2	

^{*} Only one examination was held in these years.

Note.—From and including 1934, the numbers of candidates attending the examinations for Certificates of Competency include re-examinees in written subjects and/or the oral tests.

Several important changes were made in 1934 and 1935 in the scheme of examinations for Managers' and Under-Managers' Certificates, *vide* page 62 of the Thirteenth Annual Report and pages 57 and 73 of the Fifteenth Annual Report.

TABLE 63.—Pithead Baths at Coal Mines: Accommodation in Use and in Course of Construction at 31st December, 1936.

Note—Exclusive of accommodation for mine officials only. Full particulars of the baths included in this statement will be found in the Annual Report of the Miners' Welfare Committee for the Year 1936.

A bath installation which has been erected in two instalments is included in the group appropriate to the larger instalment.

	Numb			Accommodation of the Baths Provided.							
Welfare	equippe Batl	d with	Number of Persons Employed at the			Partly by the Colliery Owners	Mainly	Under the			
District.	Completed. In course of construction.		Collieries at December, 1935,	Total.	By the Colliery Owners.	and partly out of the Miners' Welfare Fund.	out of theMiners' Welfare Fund.	Mining Industry Act, 1926.			
ENGLAND AND WALES.											
Northumberland Durham	11 (3)† 18 (6)	2 5	13,230 37,536	11,305 45,584		400	1,509	9,396			
Cumberland and Westmorland	2		1,790	1,916		_	2,114	43,470 1,916			
Lancashire and Cheshire Yorkshire, South	18 (7) 29 (8)	5 (4) 7 (7)	23,092 62,185	24,378 64,953	339 2,643	1,601 1,687	9,929	22,438 50,694			
Yorkshire, West	13 (8)	3 (3)	18,387	20,410			500	19,910			
Nottinghamshire	10 (8)	3 (3)	17,194 16,780	19,558 18,612	_	_	_	19,558 18,612			
Derbyshire, South	12 (10)	1 (1)	15,426	16,836	612		_	16,224			
Cannock Chase	3 (10)	1 (1)	3,762	3,576	- 012			3,576			
Staffordshire, South and Wor- cestershire	1 (1)	1 (1)	2,106	2,060				2,060			
Leicestershire	2	—	1,986	2,016	_			2,016			
Warwickshire Shropshire	6 (6)	1 (1)	7,495	7,856				7,856			
Forest of Dean	1(1)		1,157	1,056	<u> </u>			1,056			
Somersetshire Bristol	2		682	720	_			720			
Kent	4 (3)	-	7,283	7,035			915	6,120			
South Wales and Monmouth-	26 (5)	5 (4)	35,735	39,560	_			39,560			
North Wales	1 (1)		2,195	3,000	-	_		3,000			
Total	168 (74)	34 (25)	268,021	290,431	3,594	3,688	14,967	268,182			
SCOTLAND.											
Fife, Clackmannan, Kinross and											
Sutherland Lothians (Mid and East) and	9 (1)†	2 (1)	12,399	10,491	543		-	9,948			
Peebles	6 (2)	3 (2)	5,076	5,996	140		_	5,856			
Lanarkshire, West Lothian (Linlithgow), Stirling, Ren-											
frew and Dumbarton	26 (20)	1 (1)	14,954	17,390	890	-	_	16,500			
Ayrshire, Dumfries and Argyll	7†	1 (1)	5,707	5,284				5,284			
Total	48 (23)	7 (5)	38,136	39,161	1,573			37,588			
Great Britain	216 (97)	41 (30)	308,157	329,592	5,167	3,688	14,967	305,770			

 $^{^{\}bullet}$ The figures in brackets denote the numbers of baths provided with a Canteen τ Includes one case where the original baths are being extended.

TABLE 64.—Development in the Sinking of New Pits and Drifts in Great Britain in the Year 1936.

A.—COAL MINES ACT.

Note.—The names of Drifts and Small Pits are shown in italics.

(I) PITS STARTED AND COMPLETED. (131.)

Northumberland: Bothal Park Drift, Burnside, Causey Park Drift, Featherstone No. 4, Field Drift, George Drift, Rock House Drift, Todhillwood Drift. Durham: Brusselton Brockwell Drift, Brusselton Tower, Brusselton Tower Brockwell, Castle and Hutton Drifts, Coal Bank No. 2, Coal Bank No. 3, Coal Bank No. 4, East Park No. 2, Ewehurst No. 3, Ewehurst No. 4, Finlays Bank Drift, Hole-in-the-Wall, Kyo Drift, Littleburn, New Douglas, New Hargill Hill, Peth House Drift, Quarry Deep. Cumberland: Clarghyll Drift, Ellen Hall, West Moor End, Westward Park. Lancashire and Cheshire: Arley Hall New, Ashurst Beacon, Bickershaw Nos. 3 and 4 (deepened to Bickershaw Six Feet Seam), Brookside, Crawford Day Eye, Garswood Hall No. 6 (deepened to Orrell Yard Seam), Higher Brooks, King Edward, Parrocks. South Yorkshire: Bank Bottom. West Yorkshire: Busk Clay, Butt Croft, Horse Riggs, Lofthouse Estate, Victoria No. 3. North Derbyshire: Furnace Hill No. 2, Hady Wood, New Marsden (development). North Staffordshire: Alderhay Lane Seven Feet Banbury (New Drift), Bignall Hill No. 6, Bignall Hill No. 7 (since abandoned), Hayes Wood No. 3, Hayes Wood No. 4, Kingsley Holt, Lowlands Footrail, Stable Dip (since abandoned), Woodhouse No. 2, Woodstock Footrail No. 3. Cannock Chase: Farm, Fishley No. 1, Nook, Old Fields. South Staffordshire and Worcestershire: Cottage Pit, Ettingshall Hall No. 4, Furnace, Grosvenor, Hawbush No. 2, Hurst No. 3, Mount Pleasant, Old Park No. 27, Pemberton. Shropshire: Lawley Coppice, Red Lion. Forest of Dean: Arles Level No. 2. South Wales and Monmouth: Blaencuffin, Blaenduar, Briwnant, Darren, Dulais Rhondda, Forest, Gilfach No. 2, Graig-y-Coed, Kendon, New Clydach, Onllwyn Nine Feet Drift, Pentwyn, Penywain, Plantation, Rhengog Fawr, Rhiwfawr (since abandoned), Tylwydyn, Tyntyla Level (Forest Fach Seam), Tynygraig, Ystalyfera. North Wales: Brassey Drift (Tan Llan), Glascoed Adit, Holland Drift, Nant Mountain, New Brynmally, Riverside Level. Fife and Clackmannan: Dean No. 4, Outh. Lothians (Mid and East): Levenseat No. 2, Levenseat No. 3. Lanarkshire, etc.: Arbuckle No. 11, Avonrigg, Benhar, Braeside No. 3, Brownhill, Candie Head, Craigrigg No. 2, Craigrigg No. 3, Drumbroider, East Benhar, Gartness, Glenrigg No. 6, Greenhill No. 2, Hareburn, Hilderston Hill, Hillhead No. 2, Kennox No. 8A, Lardyke, Leaend No. 2, Mansion House, Millhill No. 3, Townhead, Wester Banknock, Wester Bowhouse. Ayrshire, etc.: Benbain No. 5, Muirhouse, Newtonhead Nos. 1 and 2.

(II) Pits started and not completed (43).

Northumberland: New Bessie Gray, Ramshaw Drift. Durham: Catchgate. Lancashire and Cheshire: Bassey Mine (Midgelden), Garswood Hall No. 7 (deepening to Orrell Yard Seam), Grotton Top Pit, Newton No. 4 (new shaft), Skelmersdale, Sumners Hall Drift. South Yorkshire: Stocksbridge, Treeton (deepening shaft). West Yorkshire: Shuttle Eye (deepening shaft). Nottinghamshire: Oakwood Grange (development). North Derbyshire: Smalley (development). Cannock Chase: Spring Meadow. South Staffordshire and Worcestershire: Milking Bank, Netherton (since suspended). South Wales and Monmouth: Graig, Great Mountain No. 3, Llwynyrhaf, Lucy Thomas No. 3, Merthyr Llantwit, Penquar, Tir Gill (since abandoned), Trolley, Wern No. 2, West End No. 2. Lanarkshire, etc.: Auchinlea No. 1, Bannockburn No. 3, Berryhill, Bishop No. 2, Braeside No. 2 (since abandoned), Canderrigg Nos. 6

and 7, Drumshangie No. 4, Lochend No. 5, Midton No. 4, Roman Camp No. 6, Tillonburn, Tomfine. Ayrshire, etc.: Bonnyton, Bowhill, Newtonhead Nos. 3 and 4, Shieldmains Nos. 8 and 9.

(III) OTHER PITS IN PROGRESS OR SINKING RESUMED (11).

Northumberland: Bayldon, Burnhouse No. 2, Gloria, Joy. Cumberland: River Drift. West Yorkshire: Sharlston (deepening shaft). South Wales and Monmouth: Bronaran Slant, Drefach Slant, Glanamman No. 2, Kilgetty. Fife and Clackmannan: Comrie.

(IV) Pits completed (except those which were started during the $\mathbf{y}_{\mathrm{EAR}}$) (22).

South Yorkshire: Warren Vale. South Derbyshire: Swadlincote (deepening). Cannock Chase: Hilton Main No. 2. Shropshire: Chorley, Highley New Sinking, Pool Hill. South Wales and Monmouth: Dwrllas, Gelli, Lucy Thomas No. 2, Werntarw Drift to Hafod Seam. Fife and Clackmannan: Cameron (two drifts from surface), Zetland. Lothians (Mid and East): Burngrange. Lanarkshire, etc.: Blackston, Carey Glen, Chapel, Goodochill, Meikledrumgray No. 3, Omoa No. 1, Spalehall No. 3, Spoutcroft No. 2. Ayrshire, etc.: Broom.

B.--METALLIFEROUS MINES REGULATION ACTS.

(I) MINES STARTED AND COMPLETED (5). Alum Clay—Hebburn Blue Clay (Durham). Fluorspar—Yew Tree (Durham). Gypsum—Clifton (Nottinghamshire). Lead Ore—Brownley Hill and Scraith Hole (Cumberland). Sandstone—Kingswell (Lancashire).

(II) MINES IN PROGRESS (4).

Barytes—Potts Ghyll (Cumberland). Iron Ore—Aldby, David Lawn (Cumberland), Yarlside No. 1 (Lancashire, detached part).

TABLE 65.—Imports of Petroleum and its Products into Great Britain and Northern Ireland during the Year 1936. (Provisional figures.)

Grand	Total.	153,628	10,153	3,105 23	167,084	296,988	191,502 6.662	1,048,013	87,426	2,224	544,123	5,090	80,986 209,945	1,187	4,646	3,854	93	2,760,574	2,927,668	2,794,738
	Total.	141,780	10,153	3,105	155,246	294,047	182,373	941,980	5,237	2,224	465,273	5,090	80,986	1,187	4,645	3,854	92	2,260,556	2,415,802	2,306,222
	Other Sorts.		*	4	4	227	11		1		* *	1		00	07 *	162	2 -	434	438	459
	Fuel Oil.	57,199	+	169	57,370	31,907	109,287	270,208	5,237	က်က	129,804	*	4,675	010	1,286	2,458	72	621,760	679,130	655,353
ducts.	Gas Oil.	1,897		912	2,810	8,749	14,789	15,655	-	11	14,364		3,341		- Inches	1	*	108,877	111,687	107,877
Refined Products	Other Lubricat-	Thousand Gallons.	100	185 34 1	218	75,498	12,026	*		77	-		23,414	1,187	4,380	1,139	19	118,035	118,253	103,403
R	Other Spirit.	Th	3,061	54	3,115	14		*		330	1		252		0	95	1	15,815	18,930	16,132
	Motor Spirit.	81,279	5,757	420	87,477	150,328	31,818	592,345	1,400	14,499	257,336	5,090	44,276		1,693	1 **	*	1,185,729	1,273,206	1,231,035
	Kero-sene.	1,405	1,334	1,512	4,252	27,324	14,453	63,772		1,610	63,768	1	5,028		643	*	*	209,906	214,158	191,963
Crude	Oil.	11,848			11,848	2,941	9,129	106,033	82,189		78,850	110,011	2.066	1	* *	*	*	500,018	511,866	488,516
	Country of Consignment.	British Empire— Trinidad and Tobago	Straits Settlements and Dependencies	Irish Free State Other British Countries	Total: British Empire	Foreign Countries— United States of America	Mexico Ecuador	Dutch West India Islands Venezuela	Peru	Outen Borneo Other Dutch East Indies	Iran (Persia)	Egypt	Soviet Union (Russia)	Poland	Germany	Belgium	Other Foreign Countries	Total: Foreign Countries	Grand Total	Total in 1935 (Revised) 488,516

* Less than 500 gallons.

Table 66.—Quantity of Petroleum Products Imported, Exported and Retained for Home Consumption in Great Britain and Northern Ireland during the Years 1933 to 1936.

Note.—The figures for 1936 are subject to revision.

		Impo	orts.			e Production		Re	tained.*			
Year.	Total. Submitted to Further Refining. Retaining.		Retained.		Exported			Percentage of Retained Home Production to Total.				
				Millio	on Gallons.				%			
	Motor Spirit.											
1933 1934 1935 1936	1,073·1 1,125·9 1,231·0 1,273·2	17·0 17·7 16·9 18·4	22·0 26·3 28·6 27·9	1,034·1 1,081·9 1,185·5 1,226·9	149·4 144·8 133·8 125·2	45·3 56·9 79·6 54·0	104·1 87·9 54·2 71·2	1,138·2 1,169·8 1,239·7 1,298·1	9·1 7·5 4·4 5·5			
		,			~		,	1				
1933	15.3	1 12.5 1	0.3 1	Othe	r Spirit. 20·7	2.0	18.7	21.2	88.2			
1934 1935 1936	19·8 16·1 18·9	15·6 11·3 8·2	0·4 0·1 0·8	3·8 4·7 9·9	24·4 20·1 17·9	1·9 1·5 0·7	22·5 18·6 17·2	26·3 23·3 27·1	85·6 79·8 63·5			
1933	185.2	10.1	13.0	Ke: 162·1 ⊢	rosene.	9.2	29 · 2	191-3	15.3			
1934 1935 1936	221·5 192·0 214·1	9·0 8·5 10·6	9·2 4·7 5·5	203·3 178·8 198·0	34·5 33·5 37·2	10·5 8·2 17·7	24·0 25·3 19·5	227·3 204·1 217·5	10 · 6 12 · 4 9 · 0			
			I	Ga	as Oil.							
1933 1934 1935 1936	113·7 130·5 107·9 111·7	0.3	2·2 4·8 3·8 4·0	111·2 125·7 104·1 107·7	46·3 53·4 51·3 63·2	18·8 24·4 23·5 23·4	27·5 29·0 27·8 39·8	138·7 154·7 131·9 147·5	19·8 18·7 21·1 27·0			
				Lubric	ating Oi	i 1.						
1933 1934 1935 1936	102·6 103·4 103·4 118·3	† †	6·8 6·4 6·2 6·6	† † †	19·1† 24·7† 25·7† 26·6†	7·1 10·1 12·8 11·6	† † †	107·8 111·6 110·1 126·7	† † †			
				Fuel and	d Diesel	Oil.						
1933	559.0	67.6	3.7	487.7	141.7	10.5	131.2	618.9	21.2			
1934	668-4	13.4	6.9	648-1	133 · 4	9.8	123.6	771 · 7	16.0			
1935	655 · 4	34.0	7.2	614.2	161.1	17.5	143.6	757·8 (311·1)‡	18.9			
1936	679 · 1	50.9	5.0	623 · 2	170.8	21.4	149.4	772·6 (302·1)‡	19 · 3			

^{*} These figures take no account of changes in stocks. The quantities stated are exclusive of motor spirit and other products obtained from coal and coal products, see page 15.
† As the figures of home production from imported petroleum and from shale do not include lubricating oils manufactured at home from imported lubricants by blending or by further chemical treatment, it is not possible to differentiate between retained imports and retained home production.
‡ The figures in brackets, which are included in the total, represent the quantities shipped as bunkers for the use of steamers engaged in Foreign trade and fishing vessels.

APPENDIX B.

LIST OF OFFICIAL COMMITTEES, ETC., IN CONNEXION WITH THE MINING AND QUARRYING INDUSTRIES, WITH MEMBERSHIP AS AT 1st AUGUST, 1937.

Advisory Committee for Coal and the Coal Industry.

Appointed under Section 4 of the Mining Industry Act, 1920.
(Vacancy) Chairman.
Mr. W. Hargreaves
Mr. M. F. Maclean, J.P
Sir A. Nimmo, K.B.E Representatives of Owners of Coal Mines.
Sir Evan Williams, Bart., LL.D., D.L., J.P
Mr. Herbert Smith, J.P Representatives of Workers in or about
(3 Vacancies) S Coal Mines.
Mr. B. Talbot, J.P.
Sir D. Milne Watson, M.A., LL.B., Representatives of Employers in other LL.D., D.L Industries.
LL.D., D.L Industries.
Mr B Tillott
Mr A G Walledon (Representatives of Workers in other
(Vacancy) Industries.
(Vacancy) Representing Mining Engineers.
(Representatives of Agents or Managers
(Vacancy)
ing First Class Certificates.
(Vacancy) Representing Coal Exporters.
Mr. H. C. Rickett, O.B.E Representing Coal Factors and Merchants.
Representing those sections of Commerce
Sir E. F. Stockton engaged otherwise than in the production and distribution of coal.
duction and distribution of coal.
Mr. T. G. Arnold, J.P Representing Co-operative Traders.
Prof. Sir J. Cadman, G.C.M.G., Representing the Medical or Other
D.Sc. Sciences
(2 Vacancies)
Mr. F. C. Starling, Secretary.
Advisory Committee for the Metalliferous Mining and
Ouarrying Industry.
Zominia in Dobini.

Appointed under Section 4 of the Mining Industry Act, 1920. MR. R. A. THOMAS, O.B.E., J.P., Chairman.

```
Major A. Hibbert, D.S.O., M.C.
Mr. I. L. Johnson . . . Mr. H. G. Atkinson-Clark Major W. D. Barratt . . Mr. F. Scopes . . .
                                            Representatives of Owners of Iron Ore
                                              Mines and Quarries.
Mr. H. Dack, O.B.E., J.P.
Mr. C. Edmonds, J.P., F.G.S.
                                           Representatives of Workers in or about
Mr. H. Nixon, J.P. ..
                                      . .
                                              Iron Ore Mines and Quarries.
Mr. J. Pickavance..
Mr. W. Sherwood ...
                                      ٠.
```

Representing Workers in or about Tin

Mr. 7. H. Bennetts

Min. J. H. Definetts
Mr. E. J. Fox
Mr. A. Wilson, M. I.M.M., M. I.M.E., Representing Owners of Lead and Zinc J.P.
Mr. A. Dalgleish Representing Workers in or about Lead and Zinc Mines.
Prof. H. Louis, M.A., D.Sc., etc Economic Geologists and Mining Mr. J. C. Allan Engineers.
Mr. F. W. Harbord, C.B.E Metallurgist.
Mr. C. Cookson Representing the Non-Ferrous Metal Trade.
Sir K. W. Goadby, K.B.E., Representing Medical Science. M.R.C.S., L.R.C.P.
Mr. E. J. Meadon, Secretary.
Board for Mining Examinations.
Appointed under Section 8 of the Coal Mines Act, 1911.
Major D. H. Currer Briggs, J.P.,
M.A., Assoc.M.Inst.C.E. Mr. Trevor L. Mort Mr. J. Hamilton Mr. F. L. Booth, O.B.E., J.P. Engineers.
LtCol. G. A. Lewis, C.M.G.
Major James Gardiner
Rt. Hon. J. Brown, P.C., O.B.E.,
Mr. J. G. Hancock, J.P
Mr. Oliver Harris Representatives of Workmen employed
Mr. W. Lawther f in Mines. Mr. Herbert Smith, J.P
Mr. J. Allen Parkinson, C.B.E.,
M.P
Sir H. Walker, C.B.E., LL.D H.M. Chief Inspector of Mines.
Mr. J. M. Carey, O.B.E.,
M.Inst.C.E. H.M. Divisional Inspectors of Mines.
Sir R. A. S. Redmayne, K.C.B.,
M.Inst.C.E.
Prof. J. A. S. Ritson, D.S.O., Cressons eminent in Mining and Scientific O.B.E., M.C., T.D., B.Sc., Knowledge.
M.Inst.M.M.,
Sir Richard Redmayne at present acts as Chairman of the Board.
Mr. A. B. Collier, A.C.A., Secretary.
MINERS' WELFARE COMMITTEE.
Appointed under the Mining Industry Acts 1920 to 1934.

Major-General The Rt. Hon. Sir Frederick Sykes, G.C.S.I., G.C.I.E., G.B.E., K.C.B., C.M.G., Chairman.

Mr. J. T. Browne Nominated by the Mining Association Mr. F. Llewellin Jacob, J.P. . . . of Great Britain.

Nominated by the Royalty Owners of Great Britain.

1

Mr. Herbert Smith, J.P. . . Nominated by the Mine-workers' Federa-Mr. W. Lawther .. Mr. Joseph Jones, C.B.E., J.P... Prof. E. L. Collis, C.B.E., M.A., M.D., M.R.C.P. tion of Great Britain.

Prof. Patrick Abercrombie, M.A., F.R.I.B.A.

Mr. A. D. Stedman, M.B.E., Secretary. Mr. T. A. Bennett, M.B.E., Assistant Secretary.

Assessors are appointed for the assistance of the Committee by the Minister of Health, Board of Education and Secretary for Scotland.

MINERS' WELFARE NATIONAL SCHOLARSHIP SCHEME SELECTION COMMITTEE.

Appointed by the Trustees of the Miners' Welfare National Scholarship Scheme.

Mr. T. Franklin Sibly, D.Sc., LL.D., Chairman.

Mr. J. J. Lawson, M.P.

Mr. J. Lambie. Mr. J. F. Rees, M.A., M. Com.

Miss Edith H. Major, C.B.E., M.A.

Prof. J. I.O. Masson, M.B.E., D.Sc., F.I.C.

Prof. E. K. Rideal, M.B.E., M.A.,

Dr. F. S. Sinnatt, C.B., M.B.E.,

Prof. R. V. Wheeler, D.Sc., F.I.C.,

Sir H. Walker, C.B.E., LL.D.

D.Sc., Ph.D., F.R.S., F.I.C.,

Prof. E. L. Collis, C.B.E., M.A., M.D., M.R.C.P.

Mr. T. A. Bennett, M.B.E., Secretary.

SAFETY IN MINES RESEARCH BOARD.

Sir Edward Troup, K.C.B., K.C.V.O., LL.D., Chairman. Mr. F. Lee, M.P.

Mr. Mark Brand, B.Sc.

Major D. H. Currer Briggs, J.P., M.A., Assoc.M.Inst.C.E. Mr. T. Cape, M.B.E., J.P., M.P.

Dr. C. V. Drysdale, C.B., O.B.E., D.Sc., M.I.E.E., F.R.S.E.

Mr. F. Edmond.

Mr. R. W. Glass.

Major H. M. Hudspeth, D.S.O., M.C., M.Sc.

Mr. F. L. Jacob, J.P. Prof. O. T. Jones, M.A., D.Sc., F.R.S.

Mr. D. Morgan, Secretary. Mr. W. R. Birrell, Assistant Secretary.

EXPLOSIVES IN MINES RESEARCH COMMITTEE.

Prof. J. F. Thorpe, C.B.E., D.Sc., F.R.S., Chairman.

Dr. G. Rotter, C.B., C.B.E., D.Sc., F.I.C. Lt.-Col. R. A. Thomas, C.B.E. Sir H. Walker, C.B.E., LL.D.

Dr. J. Weir, M.A., B.Sc., Ph.D., F.I.C. Prof. R. V. Wheeler, D.Sc., F.I.C., F.G.S.

M.R.I.

F.G.S.

D.Sc., F.I.C.

Mr. D. Morgan, Secretary.

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Major D. H. Currer Briggs, J.P.,

M.A., Assoc.M.Inst.C.E. Major H. M. Hudspeth, D.S.O., M.C., M.Sc.

Mr. W. D. Lloyd, J.P.

Prof. R. V. Wheeler, D.Sc., F.I.C., F.G.S.

Dr. H. Stafford, M.Sc., Ph.D., Secretary.

WIRE ROPES RESEARCH COMMITTEE.

PROF. SIR H. C. H. CARPENTER, M.A., D.Sc., Ph.D., F.R.S., A.R.S.M., Chairman.

Dr. G. D. Bengough, D.Sc. Dr. M. A. Hogan, D.Sc., M.Inst.C.E., F.G.S.

Major H. M. Hudspeth, D.S.O., M.C., M.Sc. Mr. B. J. Marson. Sir H. Walker, C.B.E., LL.D.

Rope and Wire Manufacturers' Representatives, forming a

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Mr. P. W. Lee. Mr. C. H. McLintock. Mr. H. Smith.

Mr. D. Morgan, Secretary.

Consultative Committee.

HEALTH ADVISORY COMMITTEE.

SIR EDWARD TROUP, K.C.B., K.C.V.O., LL.D., Chairman.

Prof. E. L. Collis, C.B.E., M.A., M.D., M.R.C.P. Dr. C. G. Douglas, C.M.G., M.C.,

Sir K. W. Goadby, K.B.E., M.R.C.S., L.R.C.P., D.P.H. Air Vice-Marshal Sir David Munro.

B.Sc., D.M., F.R.S.

K.C.B., C.I.E., M.B., F.R.C.S.(E).

Mr. F. Mallinson, O.B.E., Secretary.

SPONTANEOUS COMBUSTION (CO-ORDINATION OF RESEARCH) COMMITTEE. (Vacancy), Chairman.

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F.R.C.Sc.I., F.I.C. Mr. G. P. Hyslop.

Mr. L. Holland. Dr. F. S. Sinnatt, C.B., M.B.E., D.Sc., F.I.C. Prof. R. V. Wheeler, D.Sc., F.I.C.,

F.G.S.

Dr. F. V. Tideswell, M.Sc., Ph.D., Secretary.

MINE RESCUE RESEARCH COMMITTEE.

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Prof. P. L. Collinson, B.Sc.

Capt.P.S.Hay,O.B.E.,A.M.I.Mech.E., A.M.I.E.E.

Mr. W. F. Richardson. Prof. J. A. S. Ritson, D.S.O., O.B.E., M.C., T.D., B.Sc., M.Inst.M.M.

Mr. J. H. Thorne. Prof. R. V. Wheeler, D.Sc., F.I.C., F.G.S.

Mr. F. H. Wynne, C.B.E., B.Sc. A Representative of the Chemical Defence Research Department.

Mr. W. R. Birrell, Secretary.

ADVISORY COMMITTEE ON RESCUE WORK AND RESCUE APPARATUS. Mr. F. H. Wynne, C.B.E., B.Sc., Chairman.

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Mr. D. S. McCartie, Secretary.

FIREDAMP DETECTOR REGULATIONS COMMITTEE.

The RT. HON. ISAAC FOOT, P.C., Chairman.

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Mr. A. E. Naylor.

Mr. F. H. Wynne, C.B.E., B.Sc.

Mr. C. H. S. de Peyer, Secretary.

STANDING COMMITTEE ON MINERAL TRANSPORT.

(Vacancy), Chairman.

Mr. Duncan Bailey, O.B.E., M.Inst. T. Mr. P. R. Le Mare. Mr. E. J. Lemon, O.B.E. Mr. H. G. Lewis, J.P. Mr. R. Bell, C.B.E. Mr. E. Bevin. Mr. H. W. Cole, C.B., C.B.E. Mr. F. W. Cooper. Mr. H. L. Greig. Mr. J. Marchbank. Sir James Milne, C.S.I. Mr. G. S. Szlumper, C.B.E. Sir L. A. P. Warner, C.B.E., J.P. Mr. H. J. Heath. Mr. H. V. Hunter, J.P.

(2 Vacancies.)

Mr. W. D. Duffield, O.B.E., Ministry of Transport Secretaries. Mr. R. J. Moffat, M.B.E., Mines Department

COMMITTEES OF INVESTIGATION.

Appointed under Section 5 of the Coal Mines Act, 1930.

National Committee.

SIR WILLIAM GRAHAM-HARRISON, K.C.B., K.C., Chairman.

Mr. R. E. L. CLEAVER, Secretary.

District Committees.

District. Chairman. Northumberland. Mr. Norman Harper. Col. H. G. Faber. Mr. W. C. Sumner. Durham. Cumberland. Prof. R. A. Eastwood, Lancashire and Cheshire. LL.D. Scotland. Midland (Amalgamated)

Shropshire.

North Staffordshire. South Staffordshire (exclusive of Cannock Chase) and Worcester.

Cannock Chase. Warwickshire. North Wales. South Wales (including

Monmouthshire). Forest of Dean. Bristol.

Somerset. Kent.

Sheriff G. Morton, K.C., M.A., LL.B. Mr. H. Rhodes, M.A. Mr. E. G. M. Carmichael,

O.B.E., J.P. Mr. B. Robertson. Mr. T. N. Winning.

Mr. S. E. Pocock. Mr. R. C. Carter, J.P. Mr. W. H. Stoker, K.C. Mr. J. T. Richards, C.B.E.

Mr. T. D. Corpe.

Mr. T. D. Corpe. Sir Frederick H. Berryman. Mr. H. Kenyon Daniel.

Secretary.

Lt.-Col. J. G. Coulthred-Thompson, D.S.O.

Assistant Secretaries. Mr. J. H. R. Corner. Mr. A. Harris.

Mr. S. J. Gall.

COAL MINES REORGANISATION COMMISSION.

Appointed under Section 11 of the Coal Mines Act, 1930.

SIR ERNEST A. GOWERS, K.C.B., K.B.E., Chairman.

Mr. L. D. Holt, J.P.

Sir William E. Whyte, O.B.E., J.P.

Mr. Joseph Jones, C.B.E., J.P. Sir Felix J. C. Pole.

Mr. C. S. Hurst, C.B., O.B.E., Secretary.

COAL MINES NATIONAL INDUSTRIAL BOARD. Appointed under Section 15 of the Coal Mines Act, 1930.

(Vacancy), Chairman.

Col. the Rt. Hon. Sir Louis Arthur

Newton, Bart. Sir Fred Hayward, J.P.

Mr. J. Cadman, J.P. Mr. C. A. Nelson, M.I.M.E.

Mr. C. Irwin, J.P.

Mr. B. Madew.

Mr. E. Edwards. Mr. H. Hicken.

Mr. J. A. Hall.

Mr. J. H. Harrison.

Mr. Joseph Jones, C.B.E., J.P.

(5 vacancies).

Mr. W. H. Reynolds, M.B.E. Joint Secretaries. Mr. E. J. Meadon

ROYAL COMMISSION ON SAFETY IN COAL MINES.

THE RT. HON. LORD ROCKLEY, P.C., G.B.E., Chairman.

Sir Malcolm Delevingne, K.C.B.,

K.C.V.O.

Sir Henry Walker, C.B.E., LL.D. Mr. D. R. Grenfell, C.B.E., M.P. His Honour Judge Allsebrook.

Mr. E. O. Forster Brown.

Mr. Ebby Edwards. Mr. W. T. Miller. Mr. W. H. Telfer.

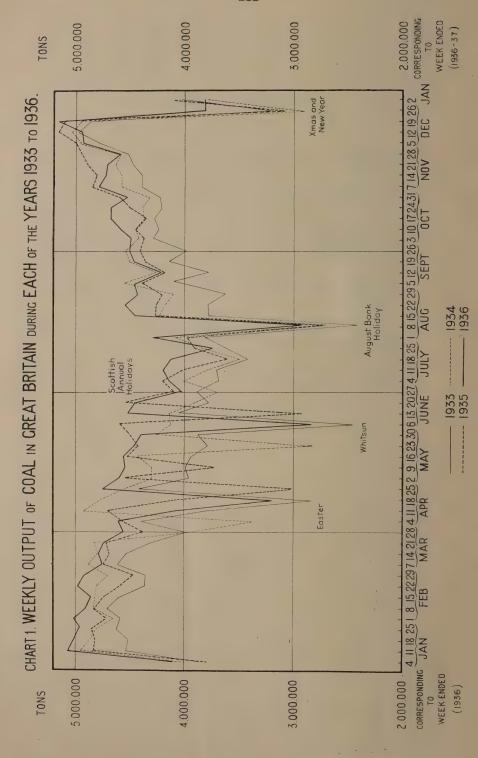
Mr. John Walker.

Mr. E. W. Ravenshear, O.B.E., Secretary.

Mr. G. B. Brown, M.B.E., R.D., Assistant Secretary.

APPENDIX C.—CHARTS.

- CHART I.—Weekly Output of Coal in Great Britain during each of the years 1933 to 1936.
- CHART II.—Output and Exports of Coal and Average Selling Price at Pit and Port in Great Britain from 1873.
- CHART III.—Price of Coal at Pit and Port and Index Number of Wholesale Coal Prices during 1933, 1934, 1935 and 1936.
- CHART IV.—Distribution by Causes of Persons Killed and Seriously Injured.
- CHART V.—Number of Deaths from Accidents per 1,000 Persons Employed at Coal and Metalliferous Mines in Great Britain from 1881, expressed as a percentage of the average rates per 1,000 persons employed below and above ground, respectively, in the years 1900–1909.
- CHART VI.—Mean Annual Death Rate from Accidents per 1,000 Persons employed at Coal Mines in the Principal Producing Countries for the Periods 1913 to 1922, 1923 to 1932 and 1933 to 1935.
- Chart VII.—(a) Coal Cutting Machines and (b) Safety Lamps in use at Coal Mines in Great Britain.



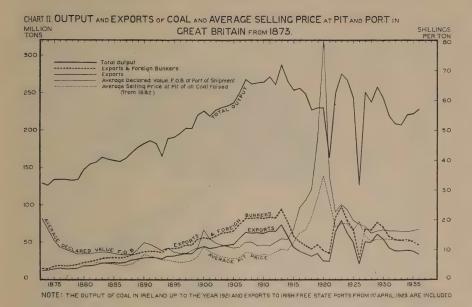
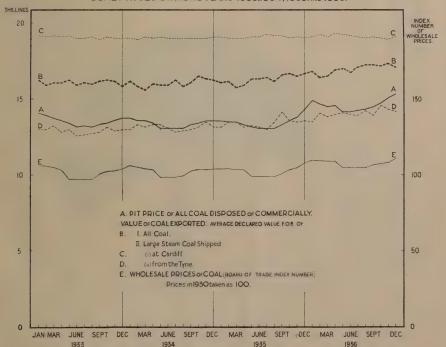


CHART II PRICE OF COAL AT PITAND PORTAND INDEX NUMBER OF WHOLESALE COAL PRICES DURING THE YEARS 1933,1934, 1935 and 1936.



DISTRIBUTION BY CAUSES OF PERSONS KILLED AND SERIOUSLY INJURED. COAL MINES ACT. CHART IV.

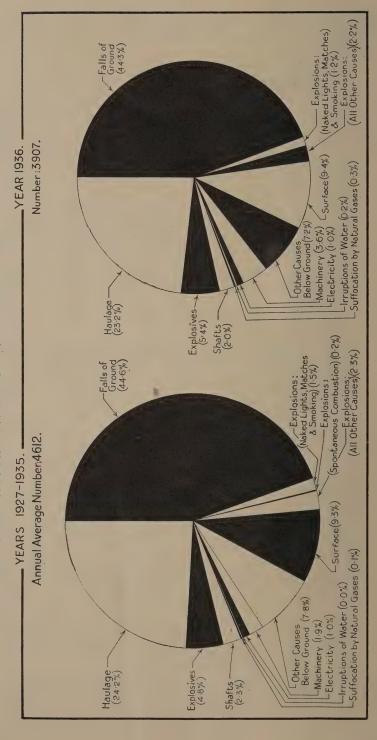


CHART Y NUMBER OF DEATHS FROM ACCIDENTS PER 1.000 PERSONS EMPLOYED AT COAL AND METALLIFEROUS MINES IN GREAT BRITAIN FROM 1881 EXPRESSED AS A PERCENTAGE OF THE AVERAGE RATES PER 1,000 PERSONS EMPLOYED BELOWAND ABOVE GROUND RESPECTIVELY IN THE YEARS 1900 – 1909.

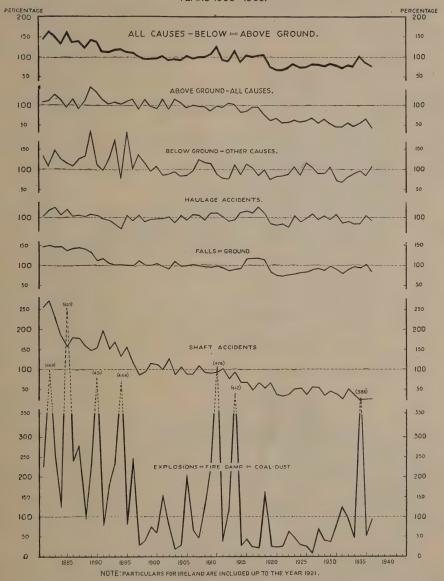
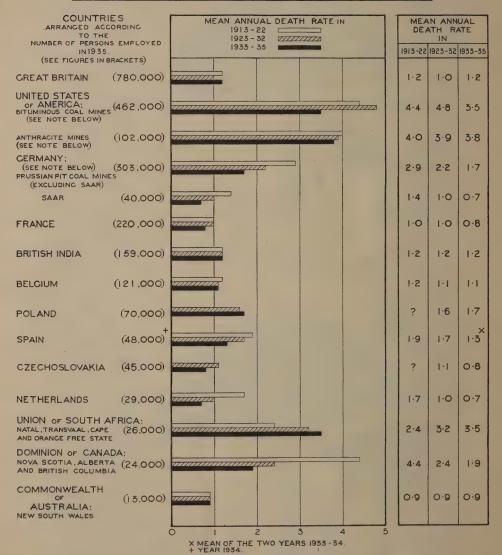


CHART VI MEAN ANNUAL DEATH RATE FROM ACCIDENTS PER THOUSAND PERSONS EMPLOYED AT COAL MINES IN THE PRINCIPAL PRODUCING COUNTRIES.

FOR THE PERIODS 1913 TO 1922, 1923 TO 1932 AND 1933 - 35.

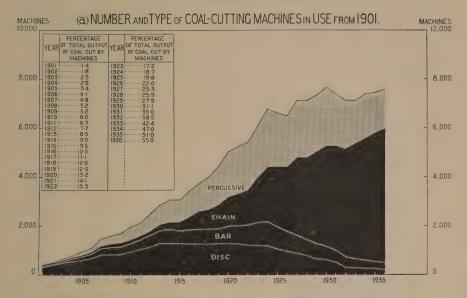


NOTE.—It should be noted that the figures from which the above fatal accident rates are calculated are subject to some divergences as between the various countries on account of difference in the methods adopted in computing both the number of deaths attributable to coal mining operations, and the number of persons employed in such operations.

The divergences which may result from these causes cannot be estimated, and may not be very great; but, in any case, their effect should be largely eliminated if comparison is made between the trends of the accident rates in the different countries rather then between the results of the accident rates in the different countries rather

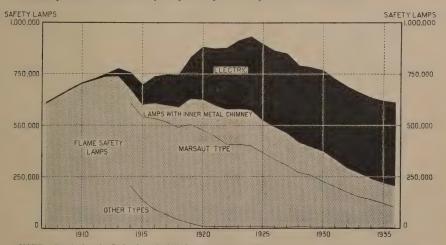
than between the absolute figures for one country as compared with another.

CHART VII. COAL-CUTTING MACHINES AND SAFETY LAMPS IN USE AT COAL MINES IN GREAT BRITAIN



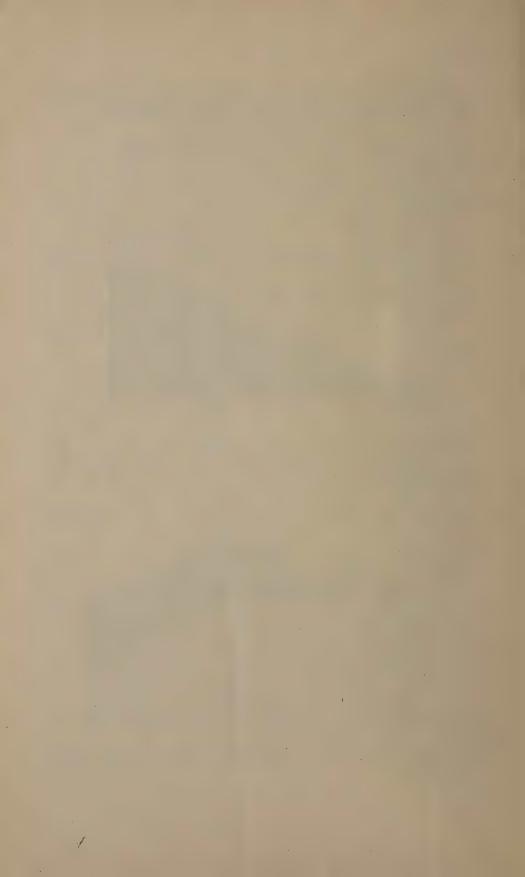
(b) NUMBER AND TYPE OF SAFETY LAMPS IN USE FROM 1907

NOTE —From 1st January, 1913, Safety Lamps of approved types only were required to be used by the Coal Mines Act, 1911, in those mines or parts of mines in which the use of Safety Lamps was prescribed by the Act or by the regulations of the mines. The three principal types of Safety Lamp in use are (a) Flame Lamps of the Marsaut type, (b) Flame Lamps having an inner metal chimney, and (c) Electric Lamps. Safety Lamps of types which are not approved are used solely in mines or parts of mines to which the Safety Lamps provisions of the Act of 1911 do not apply. Classified particulars of Flame Safety Lamps in use prior to the year 1914 are not available.



-Particulars for Ireland are included up to the year 1921. These charts show the total equipment of the coal mines, whether Coal-cutting Machines or Safety Lamps, for the country as a whole subdivided so as to indicate the proportion of each kind in use.

The particulars relate to the end of the year except in the case of chart (b) where they relate to the middle of the years since 1929.



INDEX

				PAGE
ABANDONED MINES. CATALOGUE OF PLANS OF	• •	• •	• •	73
Accidents:				
All Mines:				
Compensation cases reported under the Wor	kmen	's Cor	npen-	
sation Acts				204
sation Acts			184, Cha	art V
Coal Mines:				
Age Classification of persons Killed and Injur	red			202
Causes:				
Coal Dust. Explosions of 80, 89, 98,	102,	182, 1	84, 185,	187,
			190	, 203
Electricity			87, 182	, 190
Explosives Falls of ground 80, 81, 98, 102,			85, 182	, 190
Falls of ground 80, 81, 98, 102,	182,	184, 1	185, 190	, 203
Firedamp. Explosions of 80, 89, 98,	102,	182, 1	84, 185,	187,
			190, 194	, 203
Fires underground Haulage underground 80, 83, 98, 102,	100	104	87, 182	1, 190
Haulage underground 80, 83, 98, 102,	182,	184,	185, 190	, 203
Irruptions of water	• •	• •	87, 182	, 190
Irruptions of water	100	10/ 1	88, 182	, 190
Notared cocos Sufficiention by			92 199	100
Shoft Sunocation by	100	10/ 1	00, 102	, 190
Surface 93 98 102,	182,	184 1	85 190	203
Death rates 50, 50, 102,	102,	81	98 184	185
Shaft 80, 91, 98, 102, Surface 93, 98, 102, Death rates	ries	01,	Cha	rt VI
Death and injury rates 8	80. 81	. 82. 1	102. 185	202
Disasters:	, , , , ,	,,		,
Principal Colliery			186	, 187
Public Inquiry into, at	• •	• •	100	, 107
Gresford Colliery, Denbighshire				55
Gresford Colliery, Denbighshire Wharncliffe Woodmoor Colliery, Yo	orksh	ire	5	6, 89
Injured. Number of persons 80, 102,	183,	192,	198, 202	, 203
Injury rate			102, 185	, 203
Injury rate	182,	184,	187, 190	, 202
Killed and seriously injured. Number of	per	sons,	distrib	ution
by causes			Cha	rt IV
by causes Nature of injury and period of disablement Separate accidents. Number of	• •		• • • •	198
Separate accidents. Number of	• •	• •	102	2, 182
Metalliferous Mines:				
Death rates				184
Death and injury rates		• •		185
Injured. Number of persons	• •	• •	183, 195	, 200
Killed. Number of persons	• •	• • •	182, 184	, 194
Nature of injury and period of disablement	• •	• •	• •	200
Death rates Death and injury rates Injured. Number of persons Killed. Number of persons Nature of injury and period of disablement Separate accidents. Number of	• •	• •	• •	182
Quarries:				
Compensation cases reported under the Wor				004
sation Acts, 1906 and 1923	• •	• •	• •	204
Injured Number of persons	• •	• •	100 107	189
Willed Number of persons	• •	• • • •	188 190	106
Death rates Injured. Number of persons Killed. Number of persons Nature of injury and period of disablement Separate accidents. Number of	• •	• • •	100, 108	200
Separate accidents. Number of	• •	• •		188
Departite decidents. Trumber of	•	• •		100

				P	AGE
AIR FORCE. USE OF BRITISH PETROL	BY ROYAL		·• •		20
Air (Mine) Samples. Testing of					68
ALUM CLAY AND SHALE—Output			1	17, 122,	124
Aluminium.—See "Bauxite."					
Amalgamation of Colliery Undert	AKINGS				12
Ammonia, Sulphate of, yield of, fro	OM OIL SHALI	Ξ			106
Anglo-Irish Coal-Cattle Arrangemi	ENT				9
Anglo-Polish Agreement	••				10
ANHYDRITE.—See Gypsum.					
Animals Employed Below-ground— Numbers employed and casualties					180
Anthracite.—					
Cleaning, wet and dry		• •		• •	129 168
Exports Output			• •	• •	128
				28, 168,	176
Arsenic, White and Soot, and A	RSENICAL PY	RITES.	(See	also	
"Tin Ore and Arsenic Mines.") Imports and exports					174
Output			1	16, 122,	
Prices					116
Ball Clay (See also "Potters' Clay").	—Imports an	d Exp	orts	48,	174
BARYTES AND WITHERITE.—	•	•			
BARYTES AND WITHERITE.— Consumption at home	•			 51, 172,	172 174
BARYTES AND WITHERITE.—	•				172 174
BARYTES AND WITHERITE.— Consumption at home	:: ::			 51, 172,	172 174
BARYTES AND WITHERITE.— Consumption at home Imports and exports Output BATHS.—See "Pit-head Baths." BATTERY EXPLODERS. TESTING OF	:: ::			 51, 172,	172 174 172 67
BARYTES AND WITHERITE.— Consumption at home Imports and exports Output BATHS.—See "Pit-head Baths." BATTERY EXPLODERS. TESTING OF BAUXITE.—Imports		51,	117, 1	 51, 172,	172 174 172 67 174
BARYTES AND WITHERITE.— Consumption at home Imports and exports Output	STING OF MI	51,	117, 1	 51, 172,	172 174 172 67 174 67
BARYTES AND WITHERITE.— Consumption at home	STING OF MI	51,	117, 1	 51, 172,	172 174 172 67 174
BARYTES AND WITHERITE.— Consumption at home	esting of Mir	51,	117, 1	51, 172, 18, 125, 	172 174 172 67 174 67 15
BARYTES AND WITHERITE.— Consumption at home	STING OF MIN	51,	117, 1	51, 172, 18, 125,	172 174 172 67 174 67 15 160 172
BARYTES AND WITHERITE.— Consumption at home	STING OF MIN	51,	117, 1	51, 172, 18, 125, 	172 174 172 67 174 67 15 160 172 173
BARYTES AND WITHERITE.— Consumption at home	esting of Min	51, ving	.: 117, 1	51, 172, 18, 125, 42, 47, 115,	172 174 172 67 174 67 15 160 172 173 43
Barytes and Witherite.— Consumption at home Imports and exports Output	esting of Min	51, NING	.: 117, 1	51, 172, 18, 125, 42, 47, 115,	172 174 172 67 174 67 15 160 172 173 43 43
BARYTES AND WITHERITE.— Consumption at home	esting of Min	51, NING DING	.: 117, 1	51, 172, 18, 125, 42, 47, 115,	172 174 172 67 174 67 15 160 172 173 43 43
BARYTES AND WITHERITE.— Consumption at home	See "Examin	51, NING DING	.:. 117, 1	51, 172, 18, 125, 42, 47, 115,	172 174 172 67 174 67 15 160 172 173 43 43 196
BARYTES AND WITHERITE.— Consumption at home	SEE "Examin	51, NING PING ations	.:. 117, 1	51, 172, 18, 125,	172 174 172 67 174 67 15 160 172 173 43 43 196
BARYTES AND WITHERITE.— Consumption at home	STING OF MINT OILS INCLUE OUE TO DUE TO See " Examin trate of Borace	51, NING PING ations	.:. 117, 1	51, 172, 18, 125,	172 174 172 67 174 67 15 160 172 173 43 43 196
BARYTES AND WITHERITE.— Consumption at home	esting of Min r Oils include Due to See "Examin trate of Borac	51, NING PING ations ite an	.: 117, 1	51, 172, 18, 125, 42, 47, 115, 88, 189, 117, orite)	172 174 172 67 174 67 15 160 172 173 43 43 196

							F	AGE
Breathing Apparatus.—	Testing	g of	• •	• •	• •	• •	• •	70
Breeze.—See "Coke and	Breeze.	,,,						
Brick Earth.—See "Clay	7 .''							
Brine Salt.—Output		• •					50, 117,	119
Briquettes.—		4						
Coal used in the manu			• •	• •	• •			171
Imports and exports Output	• •	• •	• •	• •			60, 161,	171
				••	••			
Bulbs. Testing of Safi	ETY LA	MP	• •	• •	* *	• •		66
Building, Roadmaking,							10 101	150
Output and employme	ent	• •	• •	40	, 49, 1	16, 1	18, 124,	173
BUNKERS SHIPPED FOR USE		SSELS (includi	_				
Coal: Coastwise trade		• •	• •	• •	• •		10, 160,	169
Foreign trade Fuel Oil: Foreign tra		• •	• •	• •			60, 161, 108,	
ruei Oir, Foreign tra	de	• •	• •	• •	• •	• •	100,	214
CALCSPAR.—Output	• •	• •	• •	• •	• •	• •	117,	125
CANTEENS IN CONNEXION	WITH	Ріт-не	AD BA	THS	• •	• •	• •	210
CAP (ELECTRIC) LAMPS	• •							180
"Cardox" Carbon Diox	CIDE C	ARTRID	GE		• •			181
CELESTINE.—See "Stronti	um, Su	lphate	of."					
CERTIFICATES.—See "Exa	minati	ons.''						
CHALK								
Imports and exports								174
Output						1	16, 118,	
CHALK, CHERT AND FLINT	r.—Per	sons en	nploye	d				144
CHARTS. LIST OF								221
CHERT AND FLINT.—Outp	out				48, 1	15, 1	16, 118,	124
CHINA CLAY AND CHINA							,	
Imports and exports		••					48,	174
Output							15, 122,	
Persons employed								144
CHINA, POTTERY AND GLAS	ss Man	UFACTU	URE.	Minera	LS USE	D MA	INLY	
IN.—Output and empl							15, 118,	124
CHROMIUM ORE (Chromite	or Chro	ome Iro	on Ore)					174
CLAY, SHALE, etc. (See also	" Alui	m Clay.	." " Ba	II Clay.	" " Ch	ina C	lav "	
"Fireclay," "Mica	Clay,	" " Po	tters'	Clay '').			2009,	
Accidents at quarries	getting							196
Imports and exports		• •	• •	• •	• •	٠.		174
Output	• •	• •	• •	• •	• •		16, 118,	
Persons employed	••	••	••	• •	• •			144
CLEANING OF COAL. MEC			• •	* *	• •		16, 129,	178
CLEVELAND IRON ORE.—S	See " Ir	on Ore	and Ir	onstone	."			
x 16399							K	

Contraction								PAGI
COAL.— Allocations, output as	ad diene	aala ur	dor D	ogulatio	n Soh	02200	92 94 95	120
Carried on British R	ilwaye	isais ui	idei Itt	eguiatio		cines	40, 44, 40	160
Carried on British Range Cleaning, Mechanical Coastwise shipments Consumption at hom Days (mine) worked	all ways				• •	• • •	16 129	178
Coastwise shipments							10, 120	169
Consumption at hom	e						10	160
Days (mine) worked	and los	t					12	142
Exports		5, 6,	7, 8, 1	60, 161,	162,	164,	168, Cha	rt II
Days (mine) worked Exports Imports							160,	161
Macinies for getting	and con	rveville		10.	. 170.	110.	CHAIL VI	1 0
Man-shifts lost				• •				158
Man-shifts worked				• •	31,	158,	185, 192,	199
Man-shifts lost Man-shifts worked Oil Products, Produc Output 4, 6, 114, 118	tion of,	from		100 10		0 10	0 01 /	14
Output 4, 6, 114, 118	3, 123, 1	24, 12	5, 128,	130, 15	5, 15	8, 16	0, Charts	1, 11
Abroad Output per person Persons employed Prices 10, 2	• •	• •	• •	• •	• •	0.1	150 154	4, 8
Pargang ampleyed	• •	• •	• •	• •	10	120	136, 134,	150
Prices 10 2	7 99 11	1 198	155 1	56 158	161	160,	175, 176,	177
111003 10, 2	<i>a</i> , 200, 11	T, 120,	100, 1	00, 100,	101,	100,	Charts II	T11
Abroad							10). 11
Pulverised fuel for inc	dustrial	use						16
Regulation of output								23
Stocks at pit-head								5
Use of machinery bel	ow-grou	ind						12
Utilisation and treatr	nent of							14
Regulation of output Stocks at pit-head Use of machinery bel Utilisation and treatr World output of		• •	• •	• •			• •	4
COAL, COKE AND PATENT	FUEL	CARRII	ED ON	BRITIS	H RA	ILWA	YS	169
COAL-CATTLE ARRANGEME	NT. A	NGLO-	RISH					9
COAL-CUTTING MACHINES.								
Number in use					178	179	Chart VI	[(a)
Tonnage of coal cut				13.	178.	179.	Chart VII Chart VII	I(a)
COAL DUST.—				,	,	,		()
Explosions of.—See "	Evnlos	ione"						
Testing of samples of	mine d	nst					. 68	91
COAL MEASURES IRONSTO							•••	,, 01
COAL MINES ACT, 1911.					113101	10.		
Accidents at	20 109	199	19/ 1	25 126	187	190	108 202	203
Development of new	nits and	, 104, drifts	104, 10	55, 160,	107,	150,	130, 202,	211
Development of new Electrical equipment Explosives used Inspections on behalf	pres and	· · · ·		• •	• •	• •	178,	179
Explosives used							178, 180,	181
Inspections on behalf	of worl	kmen						95
List of Inspectors								76
Number of mines wo	rking						80, 139,	179
Output								123
Persons employed				• •			80, 138,	139
Principal colliery disa	sters	• •	• •	• •	• •	• •	186,	187
Inspections on behalf List of Inspectors Number of mines wo Output Persons employed Principal colliery disa Regulations and Orde COAL MINES ACT, 1930.	rs	• •		• •	• •	• •	• •	56
COAL MINES ACT, 1930.	PERATI	ON OF	SCHEM	E UNDE	R PA	RT I	OF THE	400
Const Marrier Donner Co			C. TO				22,	132
COAL MINES. ROYAL CO		NO N	SAFET	YIN	• •	* *	55,	220
COAL MINING INDUSTRY.	_							
General review Hours of labour	• •	* *	• •	• •	• •	• •	• •	140
International coal ma	rketing	agreer	nents	• •	• •	• •		148
Hours of labour International coal ma Output, costs of prod	uction	nrocee	ds and	profits	* * *	31	155 156	159
Wages (See "Wages a	and Ear	nings.	')	Pronts		01,	200, 200,	100
1.0-1		. 0.	,					

					P	AGE
COASTWISE COAL SHIPMENTS	• •	• •	• •	• •	10,	169
Coke and Breeze.—						
Gas:						
Coal used in manufacture of						
Imports and exports			• •		0, 161,	
Output and sales		• •	• •	• •		171
Other Sorts (Coke-Oven):					100	170
Coal used in manufacture of Imports and exports	• •	• •	• •		160, 0, 161,	
Number and kind of ovens in	1156	• •	• •		0, 101,	170
Output						170
Low Temperature Carbonisation \	Vorks					19
Coke Ovens.—						
Number and kind in use						170
Output of coke						170
Production and disposal of gas fro						170
Production of light oils at	• •				• •	15
Quantity of coal used at	• •	• •	• •	• •	• •	170
Collieries. Coal Consumed at	• •				158,	160
Colliery Development						211
COMMISSION, ROYAL, ON SAFETY IN	COAL M	INES			55.	220
,						
Committees, &c., in connexion w Industries.—List of		INING	AND		ang.	215
COMMITTEES OF INVESTIGATION UNDE						
Compensation Paid under the World						2410
Cases of Accident and Disease					204,	205
	AT MIN					205 21
Cases of Accident and Disease	AT MIN			RRIES		
Cases of Accident and Disease Compressed Gas for Motor Transpo Consumption at Home of—	AT MIN			RRIES	204,	21 172
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	AT MIN	VES AN	D QUA	RRIES	204,	21 172 160
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	ORT	NES AN	D QUA	RRIES	204, 10, 42,	21 172 160 172
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	AT MIN	···	D QUA	RRIES	204, 10, 42, 108,	21 172 160 172 214
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	AT MIN	···	D QUA	RRIES	204, 10, 42,	21 172 160 172 214
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MIN	···	D QUA	RRIES	204, 10, 42, 108,	21 172 160 172 214 179
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	ORT COAL	···	 	RRIES	204, 10, 42, 108, 3, 178,	21 172 160 172 214 179
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	ORT COAL	···	D QUA		204, 10, 42, 108,	21 172 160 172 214 179
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	ORT COAL	······································		RRIES	204, 10, 42, 108, 3, 178,	21 172 160 172 214 179
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	AT MIN		QUA	RRIES 1	204, 10, 42, 108, 3, 178, 	21 172 160 172 214 179 174 122
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	AT MINORT COAL	······································	Qua		204, 10, 42, 108, 3, 178, 	21 172 160 172 214 179 174 122 174 135
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MINORT COAL MINING	NES AN	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156,	21 172 160 172 214 179 174 122 174 135 158
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MINORT COAL MINING	NES AN	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156,	21 172 160 172 214 179 174 122 174 135
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MINORT COAL MINING	NES AN	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156,	21 172 160 172 214 179 174 122 174 135 158 118
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MINORT COAL MINING	NES AN	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156,	21 172 160 172 214 179 174 122 174 135 158 118
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MIN ORT COAL MINING UMBER	INDU of Pe	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156, YED	21 172 160 172 214 179 174 122 174 135 158 118
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MIN ORT COAL MINING UMBER	INDU of Pe	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156, YED	21 172 160 172 214 179 174 122 174 135 158 118
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	AT MINORT COAL MINING UMBER and expo	INDU OF PE	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156, YED 	21 172 160 172 214 179 174 122 174 135 158 118 16 16 174
CASES OF ACCIDENT AND DISEASE COMPRESSED GAS FOR MOTOR TRANSPORT CONSUMPTION AT HOME OF— Barytes	AT MINORT COAL MINING UMBER COAL I	INDU OF PE	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156, YED 	21 172 160 172 214 179 174 122 174 135 158 118
Cases of Accident and Disease Compressed Gas for Motor Transport Consumption at Home of— Barytes	COAL I CO	INDU OF PE	D QUA	1 1 1 1 1 1 1 1	204, 10, 42, 108, 3, 178, 2, 124, 5, 156, YED 	21 172 160 172 214 179 174 122 174 135 158 118 16 16 174

T C		. D			1	AGE
DEVELOPMENT IN SINKING OF NEW F	TIS ANI	DRII	FTS	• •	• •	211
DIATOMITE.—Output		• •	• •	• •	117,	122
DIESEL OIL.—See "Fuel and Diesel O	il.''					
DISASTERS. COLLIERY				55, 89		187
Diseases. Miners'.—Number of case paid under the Workmen's Compe					ion 204,	205
DISTRICT COMMITTEES OF INVESTIGAT 1930, PART I			COAL M	Ines A		219
DISTRICT SCHEMES FOR THE REGULAT			UT ANI	PRICE	s 22	. 23
DISTRICT WAGES AGREEMENTS						148
DOLOMITE.—See "Limestone."	• •				00,	110
Domestic Coal Consumption						160
	• •	• •	• •	• •	••	
Drainage of Halkyn Mining Area		• •	• •	• •		46
Dressers or Grinders.—Numbers en						145
DRILLS. USE OF PNEUMATIC (MECHA		Picks	AND	• •	13,	178
Dust (Mine) Samples.—Testing of				• •	68	, 91
Duties, Import. See "Import Duties	s.''					
EARNINGS See " Wages and Earnings	·,'					
EDUCATION. MINING.—See "Welfare	Fund.	Miner	s'.''			
EDWARD MEDAL						98
ELECTRICAL APPARATUS. TESTING OF						68
ELECTRICAL EQUIPMENT AT COAL MINE						00
Motors. Horse power of	s (see ai	30 3	arety L	amps)	170	
						179
Number of mines at which installe	d				170,	179 179
Number of mines at which installe	d	• • •	• •	• •	170,	179
Number of mines at which installe Electrical Shot-Firing Apparatus.	d Testi	NG OF	• •	• •	• •	179 67
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE (d Testi of	NG OF	••	 87, 182	, 188,	179 67 190
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations.	d Testi of Coal (ng of Consui	••	 87, 182	, 188,	179 67
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safety Lamps.—See "S	d Testi of Coal (ng of Consui	••	 87, 182	, 188,	179 67 190
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—	d Testi of Coal (ng of Consui	••	 87, 182	, 188,	179 67 190
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—Coal:	d Testi of Coal (ng of Consui	••	 87, 182	 , 188, 	179 67 190 160
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—Coal: Days worked and lost	d Testi of Coal (ng of Consui	••	87, 182,	 , 188, 	179 67 190 160
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—Coal: Days worked and lost	d Testi of Coal (ng of Consui	••	87, 182,	, 188,	179 67 190 160
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked	d Testi of Coal (NG OF CONSUI		87, 182, 158, 185	12, 	179 67 190 160 142 148 158 199
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE (ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.— Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed	TESTI OF COAL (ty Lamp	NG OF CONSUI		87, 182	12, 	179 67 190 160 142 148 158 199
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE (ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.— Coal: Days worked and lost Hours of labour Man-shifts lost Persons employed Iron Ore and Ironstone:	TESTI DF COAL (ty Lamp	NG OF CONSUI		87, 182 87, 182 158, 185 130, 136	12, , 192,	179 67 190 160 142 148 158 199 158
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Man-shifts worked	TESTI DF COAL (ty Lamp	NG OF CONSUI		87, 182 87, 182 158, 185 130, 136 185, 194	12, 192, 194, 199,	179 67 190 160 142 148 158 199 158 201
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Man-shifts worked Persons employed Man-shifts worked Persons employed	TESTI DF COAL (ty Lamp	NG OF CONSUI		87, 182 87, 182 158, 185 130, 136	12, 192, 192, 199,	179 67 190 160 142 148 158 199 158 201
Number of mines at which installe Electrical Shot-Firing Apparatus. Electricity. Accidents from use of Electricity Generating Stations. Electric Safety Lamps.—See "Safet Employment.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Persons employed Man-shifts worked Persons employed Man-shifts worked Persons employed Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous):	TESTI DF COAL (ty Lamp	NG OF CONSUI		158, 185, 186, 194, 41, 42,	12, , 192, , 190, , 199, , 136,	179 67 190 160 142 148 158 199 158 201 144
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous): Man-shifts worked Persons employed	d TESTI DF COAL (ty Lamp	NG OF		87, 182 87, 182 158, 185 130, 136 185, 194	12,, 192, 140, 199, 136, 194,	179 67 190 160 142 148 158 199 158 201 144 201
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.— Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous): Man-shifts worked Persons employed Man-shifts worked Persons employed Man-shifts worked Persons employed Man-shifts worked Persons employed Minerals other than coal and meta.	d TESTI DF COAL (ty Lamp	NG OF		87, 182 87, 182 158, 185 130, 136 185, 194 1, 41, 42 185 1, 44, 46	12, , 192, , 140, 136, , 194,	179 67 190 160 142 148 158 199 158 201 144 201 144
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.— Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous): Man-shifts worked Persons employed Minerals other than coal and metal. Persons employed	TESTI OF COAL (ty Lamp	NG OF			12, , 192, , 140, 136, , 194,	179 67 190 160 142 148 158 199 158 201 144 201 144
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous): Man-shifts worked Persons employed Minerals other than coal and metal Persons employed Persons employed Persons employed Persons employed	TESTI DF COAL (ty Lamp	Ores:		87, 182 87, 182 158, 185 130, 136 185, 194 1, 41, 42 185 1, 44, 46	12, , 192, , 140, 136, , 194,	179 67 190 160 142 148 158 199 158 201 144 201 144
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous): Man-shifts worked Persons employed Minerals other than coal and metal Persons employed Persons employed Persons employed Minerals other than coal and metal Persons employed Persons employed Persons employed County	TESTI DF COAL (ty Lamp	Ores:		87, 182 87, 182 158, 185 130, 136 185, 194 1, 41, 42 185 1, 44, 46	12, , 192, , 140, 136, , 194,	179 67 190 160 142 148 158 199 158 201 144 201 144
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Persons employed Metalliferous Ores (Non-ferrous): Man-shifts worked Persons employed Minerals other than coal and metal Persons employed Persons employed Persons employed Persons employed	TESTI DF COAL (ty Lamp	Ores:		158, 185, 185, 194, 41, 42, 185, 194, 44, 46, 185, 144, 46,	12, , 192, , 140, 136, , 194,	179 67 190 160 142 148 158 158 201 144 201 144 144 119
Number of mines at which installe ELECTRICAL SHOT-FIRING APPARATUS. ELECTRICITY. ACCIDENTS FROM USE OF ELECTRICITY GENERATING STATIONS. ELECTRIC SAFETY LAMPS.—See "Safet EMPLOYMENT.—Coal: Days worked and lost Hours of labour Man-shifts lost Man-shifts worked Persons employed Iron Ore and Ironstone: Man-shifts worked Persons employed Man-shifts worked Persons employed Man-shifts worked Persons employed Minerals other than coal and meta. Persons employed at: (See also about Mines and Quarries. County Mines under the	TESTI DF COAL (ty Lamp	Ores:		158, 185, 185, 194, 41, 42, 185, 194, 44, 46, 185, 144, 46,	12, , 192, , 140, , 196, , 136, , 136,	179 67 190 160 142 148 158 199 158 201 144 201 144 144 119 139 139

EQUIPMENT AND PLANT IN USE IN COAL MINES 12, 16, 129, 178, 179, Chart VII
EQUIPMENT. PROTECTIVE 95
Examinations for Colliery Officials: Statutory.— Board for
Exploders. Testing of Magneto and Battery 67
Explosions of Firedamp or Coal Dust. Accidents due to Number of persons killed or injured 80, 89, 98, 102, 182, 184, 186, 187, 190, 203, Charts IV, V
Principal disasters 55, 89, 186, 187
Explosives (see also "Blasting at Quarries" and "Shot-firing").— Accidents due to
Export Markets (International). Regulation of 10
EXPORT SUPPLY ALLOCATIONS AND DISPOSALS 24, 25, 132
Coal: Destinations
Iron and steel
Falls of Ground at Mines and Quarries.— Accidents due to 80, 81, 98, 102, 182, 184, 185, 188, 189, 190, 203, Charts IV, V Felspar.—Imports and exports
Fines Imposed for Offences under the Mines and Quarries Acts 7 206
Imports and exports
Fireclay, Moulding and Pig-bed Sand and Silica Stone (including Ganister and Silica Sand) used as Refractory Material.—Persons employed
FIREDAMP DETECTORS 56, 61
FIREMEN'S CERTIFICATES.—See "Examinations."
Fires, Underground. Accidents from 87, 182, 186, 190
FLAMEPROOF ELECTRICAL APPARATUS. TESTING OF 68
FLAME SAFETY LAMPS.—See "Safety Lamps."

The same	. C		((()	4 225					Ρ.	AGE
	CHERT AND			nert ").					116 110	194
E	Output Persons employe	ed ed	• •				• •	• •	116, 118,	
	RSPAR.—	ca	••	• •	• •	• •	• •	••	••	1.1.1
	Exports								47,	174
	, † ,							47.	115, 122,	
	AND DIESEL									
	Bunkers								108,	214
F	Exports						• •			214
	Home consump		• •			• •	• •		108,	
I	mports	• • •	• •	• •		• •	• •	• •	213,	
	Obtained at refi			• •	** * * * * * * * * * * * * * * * * * * *	• •	• •	• •	107,	
T 1	Prices		70.1				• •	• •	109,	110
	, Pulverized				uel."					
	TREATMENT A				• •	• •	• •	• •	• •	
FULL	er's Earth	• •			• •	• •			117,	122
GANIS	STER.—See " Si	ilica St	one, et	c.''						
GAS.	COMPRESSED, I	PRODUC	ER. FO	к Мот	OR TRA	NSPORT	r		20	. 21
	Co-ordinatio									
	West Scotlan				··		••		01, 11	21
	PRODUCTION A									
									21,	
	PRODUCTION O	F, BY	Low 1	LEMPER	RATURE	CARBO	NISAT	ION	• •	19
	ORKS.—									
	Output and sale			• •	• •	• •		• •	• •	171
	Production of li			• •	• •	• •	• •	• •	100	15
	Quantity of coa	n usea	at	• •	• •	• •	• •	• •	160,	1/1
	Coal.— Exports									168
	Prices	• •	• •	• •	• •			• •	168, 176,	
	~									21
		• •	• •	• •	• •	• •	• •	• •	• •	ال سک
	OIL.—									014
1	Exports Home consump	tion	• •	• •	• •	• •	• •	• •	108,	214
7	Import duty	· · ·	• •	• •	• •	• •	• •	• •	• •	110
5	Imports								213,	
	Obtained at ref								107,	
]	Prices							٠.	109,	110
GASE	s. Accidents	DUE	TO SUI	FFOCAT	ION BY	NATU:	RAL		86, 182,	190
GATE	e-end Loaders	3								14
	s Manufactui									
	and.—Output									124
COLL	.—Obtainable	from F	Rritich	ores						122
					• •	• •	••			
	ORE.—Outpu				т.		٠٠,	• •	122, 125,	100
	NITE (see also "									174
GRAY	VEL AND SAND	(see al	so · M	oulding	g and p	ig-bed	sand ")	110 105	170
	Output Persons employ	· · ·	• •	• •		115,	116,	117,	118, 125,	1/3
:	Purposes for w	hich ne	ed	• •	• •			• •	• •	173
	FORD COLLIER		IDICHO	uibr.	Diese	··		• •		55
								• •		
	o, Gas				• •			• •	• •	21
GRIN	DSTONES, PULI	STONE	S, SCY	THE-STO	ONES, E	TC.—U	utput			173

C						P	AGE
GYPSUM (including Anhyd Imports and exports							174
Output				• •		116, 118,	125
HALKYN MINING AREA.	Druma	MENT O	70				46
		MENI O.	F	• •	••	• •	40
Haulage. Undergroun Accidents due to		83. 98.	102. 18	82. 184.	185.	186, 190,	203.
	,	, 00, 00,	102, 1	J., 101,		Charts IV	
HEALTH AND SAFETY OF				-			0.0
Assistance for Resear Safety in Mines Resear				Fund	• •	38, 64,	38
HEMATITE IRON ORE.—S					••	00, 04,	2u 3. I
Horses Employed Belo							
			Amm				140
Hours of Labour at C	OAL MINE	S	• •	• •	• •	• •	148
Household Coal.— Consumption							160
Exports			• • •	• •	• •		168
Prices						168, 176,	177
Hydrogenation						14	, 20
T D							
IGNEOUS ROCKS.—	makkim m						100
Accidents at quarries	getting	• • •	• •	116	117	119, 125,	173
Output Persons employed							144
Purposes for which u							173
IMPORT DUTIES. Petrole	um produ	cts	• •			107,	110
IMPORT RESTRICTIONS AN	BROAD. C	OAL				• •	7
IMPORTS.—							
Coal, coke and manuf				• •	• •	160,	161
Iron and steel Minerals (other than	··· ···	manufac	turec t	hereof	• •	172, 172,	174
Petroleum products						107, 213,	214
INLAND SUPPLY ALLOCAT			SALS	• •		24, 25,	
INRUSHES OF WATER.—S					• •	y, -2, 20,	
Inspection of Mines an	_		***************************************				
Appointments, resign							79
Names and addresses	of Inspect	tors					76
Number of inspection		-	tors	• •	• •	• •	80
On behalf of workmen			• •	• •	• •	• •	95
INTERNATIONAL COAL MA					• •	• •	10
INTERNATIONAL REGULAT						1000	44
Investigation, Committee Part I			COAL.	MINES	Аст,		219
IRON AND STEEL.—	••	• •	• •	• •	• •	40,	210
Coal consumed in the	manufact	ure of					160
Condition of the indu	stry						43
Imports and exports			• •	• •	• •		174
Iron obtainable from Output of pig iron an			casting	ors · ·		• • •	122 43
Prices							43

							P	AGE
IRON AND STEEL AND OTHER								
THAN METALLIFEROUS Employment						40, 46,		173
Iron Ore and Ironstone								
Consumption at home							42,	172
Imports and exports		• •				42,	172,	174
Output Prices			40, 4	1, 114,	110, 1	123, 124, 41,	114.	134
IRON ORE AND IRONSTONE						,	,	
Accidents at					182, 1	85, 194,	196,	198
Man-shifts worked	• •	• •	• •	• •		85, 194,		
* *		• •		• •		, 41, 42,	136,	144
Iron Oxides.—See "Bog	Ore,'' '	'Ochre	e, Umb	er, &c.	,			
IRON PYRITES.—							40	1774
Imports and exports Output					• •	116,		
Iron Works.—See "Blast			••	• •	•	110,	144,	120
						07 100	100	100
IRRUPTIONS OF WATER.	ACCIDE.	NTS DI	JE TO	• •	• •	87, 182,	100,	190
JURASSIC IRONSTONE.—See	" Iron	Ore a	nd Iron	istone.	,			
KEROSENE (OR LAMP OIL)								
Exports					• •			
Home consumption		• •		• •	• •	• • •	108,	214
Import duty Imports:		• •				••	213.	214
Obtained at refineries				••		98,	107,	214
Prices	• •	• •	• •		• •	• •	109,	110
LABOUR.—See "Employme	ent.''							
LAMP BULBS, SAFETY. T	ESTING	OF						66
LAMP OIL.—See "Keroser	ie.''							
Lamps.—See "Safety Lam	ips.							
Lead.— Imports and exports								174
Obtainable from Britis				• •				122
Prices								46
LEAD ORE.—								
Imports and exports							45,	
Output						114, 118		
Prices	• •		• •	• •	**	• • • •	• •	45
LEAD AND ZINC MINES.—								101
Accidents at Man-shifts worked		• •	• •	• •	• •		• • •	194 194
Persons employed		• • • • •			• •		46,	
LECTURES GIVEN BY INSP								100
LEGISLATION.—-See "Mine								
LIGHTING, MINE								58

					Р	AGE
LIMESTONE (including Dolomite).—						196
Accidents at quarries getting Output	47	48 115	116	117	119, 125,	
Persons employed	***		110,			144
Purposes for which used						173
Loaders					13, 14,	179
	••	• •				
LOCOMOTIVE (RAILWAY) COAL. CON	SUMPTIO	N OF	• •	• •	1	100
Low-Density Explosives	• •					181
Low Temperature Carbonisation						19
LUBRICATING OIL.					•	
Exports						214
Home consumption	• •		• •	• •	108,	214
Imports	• •	• •	• •	• •	213,	107
Prices	• •		• •			109
111000	••	••	•	•		
7.5	**			00	100 100	100
MACHINERY. ACCIDENTS DUE TO THE					182, 188,	
MACHINERY. USE OF BELOW-GROUP	ND, AT C	COAL MI	NES	• •	• •	12
Magneto Exploders. Testing of	• •			• •	- • •	67
Managers' Certificates.—See "Ex	aminatio	ns."				
Manganese Ore.—						
Imports	• •	• •			• •	174
Output	• •	• •	• •	• •	• •	125
Man-shifts.—See "Employment."						
Manufactured Fuel.—See "Briqu	ettes.''					
Mechanical Coal Cleaning					16, 129,	178
MECHANICAL CONVEYORS AND LOAD	DERS			13,	14, 178,	179
MECHANICAL (PNEUMATIC) PICKS AN	DRILI	S			13,	178
METALLIFEROUS MINES ACTS. MINE	ES UNDE	R THE.				
Accidents at			182,		185, 194,	
Development of new mines, etc.	• •	• •	• •		43, 46,	181
Explosives used List of Inspectors	• •		• •		• • •	76
Number of mines working		• •	• •	• •		139
Output						123
Persons employed						
Special Rules and Regulations	• •	• •	• •		• •	57
METALLIFEROUS MINING.—					105 10/	201
Man-shifts worked	• •	40 114	118	122	185, 194, 123, 124,	134
Output Persons employed	• •				40, 136,	
METALLURGICAL COKE.—See "Coke,						
METAL OBTAINABLE BY SMELTING I						122
MICA CLAY.—Output			•		117, 122,	
MINE AIR SAMPLES. TESTING OF			• •	• •		
		• •	• •	• •		
Mine Dust Samples. Testing of	• •	• •	• •	• •	68	3, 91
MINE LIGHTING	• •		• •		• •	58
MINE RESCUE WORK.—See "Rescu						
MINERS' COAL. CONSUMPTION OF						158

35 ID C ((D		7.51	, ,,				P	AGE
Miners' Diseases.—See "D								
MINERS' NYSTAGMUS.—See	_							
MINERS' SAFETY LAMPS.—Se			_					
MINERS' WELFARE FUND.	See " V	Velfar	e Fund	."				
MINES.—								
Consumption of fuel at					• •	• •	158,	
List of Inspectors .					• •	• •	• •	76
MINES. CATALOGUE OF PLA					• •	• •	• •	73
Mines (Working Facilities under Part I of .	AND S		ат) А ст		Pro 		GS ••	52
MINING BELLS, RELAYS AND	TELE	EPHON	es. Ti	ESTING	OF			67
MINING EXAMINATIONS.—Se	e "Ex	amina	tions."					
MINING INDUSTRY ACT, 192								52
3.5		•	•	•	•		180,	
		•	• • .	• •	• •	••	100,	101
Motor Spirit.— Exports								214
Home consumption .			• •				108,	
								107
Imports			• •				213,	214
Obtained at refineries.						.,	107,	214
Prices								109
Produced from coal and	l indige	enous i	materia	ıls	• •	• •	15,	107
Moulding and Pig-Bed Sa	ND.—							
Output		•	• •	• •	• •	47, 115,	118,	125
NAYLOR SPIRALARM FIREDA	MP DI	ETECT	OR			• •	• •	62
NAKED LIGHTS. EXPLOSION	S DUE	TO					٠	89
NEW PITS AND DRIFTS. D	EVELO	PMENT	OF					211
Nystagmus. Miners'Nu	mber	of case	es					205
						117	110	105
Ochre, Umber, &c.—Outpu	it .	•	• •	• •	• •	117,	119,	125
OIL.—See "Petroleum."								
OILS FROM COAL AND INDIC	GENOUS	MAT	ERIALS.	Pro	DUCTI	ON OF	15,	107
OIL REFINERY OPERATIONS						••		107
OIL SHALE.—See "Shale.	Oil.''							
OUTPUT.—See " Production		specifi	c minei	rals na	med.			
OUTPUT, COSTS OF PRODUCT						THE CO	A T	
Mining Industry .				I KOFI	15 OF	31, 155,	156	158
	•	•	•	•		-, 200,	,	
Dipper print on I nominate			Taronno	TODG O	n Mrs			100
Papers read or Lectures				TORS C	F. MIIN	ES	• •	100
PERMITTED EXPLOSIVES.—S		-						
Persons Employed in Min and names of minerals s			RRIES	See '	'Emp	loyment	t ''	
Petroleum.—								
Drilling for, under Licer		•	• •	• •	• •	• •	****	103
0 1		•	• •	• •	• •	••	107,	
Output				• • • •	• •	• •	117,	107
- oportuna								-01

							I	PAGE
Petroleum Department.	REP	ORT (OF	• •			• •	103
Petroleum (Production)	Аст,	1918.	—Lic	ences in	force	under		106
PETROLEUM (PRODUCTION)	Аст,	1934.						
Licences granted and in				• •				103
Map showing licensed a	areas 1	under	• •		• •	• •	facing	104
Petroleum Products.—								
Home consumption			• •	• •		• •	108,	
Import duty Imports and exports	• •	• •			• •		107, 107, 107, 213,	
Obtained at refineries		• •	•	• • •	• • •		107,	214
Prices	• •						109,	
PICKS AND DRILLS. USE	of M	ECHAN	NICAL	(PNEUM	ATIC)		13,	178
Pig-bed Sand.—See " Mou	lding	and I	Pig-be	d Sand.	,			
Pig Iron (see also "Blast	Furna	ces '')	.—					
Obtainable from Britisl								122
				* 4	• •	• •		43
Production	• •	• •		• •	• •	• •	• •	43
PIT-HEAD BATHS.—								
Baths Fund				• •			33	
Canteens in connexion			***	** *	• •	• •	35,	
Number installed, etc.		• •	• •	• •	• •	• •	34,	210
PIT PONIES.—See "Animal	s.''							
PLANS OF ABANDONED MIN	NES.	Сата	LOGUI	E OF	• •			73
PLANT AND EQUIPMENT IN	Her	АТ С	OAT T	MINITE	1 (16 1	29, 178,	179
PLANT AND EQUIPMENT IN	USE	AI C	OAL I	MINES		۵, 10, 1	Chart	
Polish Agreement. Angi	LO-			• •	• •			10
POTTERS' CLAY (including B	BALL (CLAY)						
Imports and exports		• •		* *			48,	174
		• •	•" •	• •	• •	48, 1	15, 119,	124
POTTERY AND GLASS MANU	FACTU	RE.	MINE	RALS U	SED	MAINL	Y IN	
CHINA.—Output and en							15, 118,	124
Prices.—								
Coal:								
Ā1 . 1		11,		168, 175			harts II,	III 11
Pit-head	10, 31	, 114,	128,	155, 156	, 158,	177, C	harts II,	III
								11
Hortnightly Marke								
	t Que	tation	ns	• •	• •			177
Iron ore and ironstone.	t Quo	tation	ns	• •	• •		41, 114,	134
Iron ore and ironstone. Metalliferous ores. No.	t Quo n-ferr	otation ous	ns	• •	••	••	41, 114, 114,	134 135
Iron ore and ironstone. Metalliferous ores. No. Metals	t Quo n-ferr	otation ous 	ns	••	• •	••	41, 114, 114, 45	134 135 , 46
Iron ore and ironstone. Metalliferous ores. Not Metals Minerals other than coa	t Quo n-ferr l and	otation ous metal	ns	ous ores	•••	•••	41, 114, 114, 45, 47, 115,	134 135 , 46 173
Iron ore and ironstone. Metalliferous ores. No. Metals	t Quo n-ferro l and	otation ous metal	ns	ous ores		•••	41, 114, 114, 45, 47, 115,	134 135 , 46 173

D							P	AGE
Production.—	100	104 10	C 100	100 15	C 10	0 10	Charle :	r m
Coal 4, 6, 114, 118	5, 123,	124, 12	6, 128,	130, 13	5, 15	8, 160) Charts.	1, 11 4 S
Abroad Per person Regulation of coa Coal briquettes		• •				31	153 154.	158
Regulation of coa	al, und	er the (Coal Mi	nes Act	. 193	0. Pa	rt I	23
Coal briquettes Coke and breeze County summary of r Iron ore and ironston Iron, pig Non-ferrous ores						·		171
Coke and breeze							19, 170,	171
County summary of r	nineral							118
Iron ore and ironston	e	• •	4	11, 114,	118,	123,	124, 134,	172
Iron, pig	• •	• •		• •			110 104	43
Non-terrous ores			1.0	• •	43,	114,	118, 124,	135
Minerals other than c	oal and	i metai	liierous	ores 4	11, 10	J, TJ,	50, 115, 124, 172,	110
7.5							124, 172,	170
Mines under the: Coal Mines Act, Metalliferous Mir Oils, petroleum, &c. Quarries under the Q Steel ingots and casti	1011							100
Motolliforma Mir	1911	• •	• •	• •	• •	• •		$\frac{123}{123}$
Oils petroleum &c	les Act	* *	• •	• •	• •	1.	4, 15, 16,	107
Ouarries under the O	na rries	Act	• •	• •	• •	Τ.	••	146
Steel ingots and casti	ngs	1100						43
D Cool ingoto and daba	65			•				
PROFITS OF THE COAL M								150
DUCTION, PROCEEDS .	AND	• •	• •	• •	• •	31,	155, 156,	158
Prosecutions for Offen	CES UN	NDER TI	HE MIN	ES AND	Qua	RRIES	s Acтs 55 ,	206
PROTECTIVE EQUIPMENT	*.*	• •	•.•					95
PULPSTONES, GRINDSTONE								173
Pulverized Fuel for I								
Fuel consumed	NDUSII	CIAL C.	5E					17
Fuel consumed Type and size of boile	er							18
Pyrites. Iron.—			٠, .				40	177
Imports and exports Output	or cupi	reous py	yrites	• •	• •	• •	116 100	174
Output		• •	**	• •	• •	• • •	110, 122,	140
Quarries Act. Quarrii	ES UND	ER THI	E.—					
Accidents at Explosives used List of Inspectors Number of quarries v						188,	189, 196,	200
Explosives used								181
List of Inspectors								76
Number of quarries v	vorking	ζ						139
Output Persons employed	• •	• •	• •	• •	• •	• •		146
Persons employed	• •	• •	• •	• •		• •	139,	146 58
Special Rules	• •	• •	• •	• •	• •	• •	• •	50
RAILWAYS. COAL, COKE	AND P	ATENT	FUEL	CARRIE:	D ON	Bri	rish	169
RAILWAYS. LOCOMOTIVE	COAL	CONSUI	MED ON	ī		٠		160
RAILWAYS, SIDINGS AND								
and outside quarries).	Acci	DENTS	ON	93,	102,	182,	188, 190,	203
REGENERATIVE COKE OV								170
REGULATION OF EXPORT	MARKE	ET (INT	ERNATI	ONAL A	GREI	EMEN:	rs)	10
REGULATION OF OUTPUT	AND S	UPPLY	UNDER	PART	I of	THE	COAL	
MINES ACT, 1930								23
REGULATION OF TIN EXI								44

REGULATIONS.—See "State		Dulog	nd Ond				F	AGE
RELAYS. TESTING OF MI	-				AND		• •	67
Rescue Work.—		22220,	2223	1101120	222.25	• • •	••	V/#
Research Committee								218
Testing of apparatus								70
Reviving apparatus for	or use	in						70
RESEARCH.—								
Assistance from the M								
Board. Safety in Mir				• •	• •	• •	38	
Committees				• •	• •	• •	217,	218
REVIVING APPARATUS FOR	R USE	IN MI	NE RES	CUE W	VORK	• •		70
RINGROSE AUTOMATIC FIR	EDAMF	ALARM	1					62
Road-making, etc. Min								
Output and employment								
Rock Salt.—Output							50, 117,	
ROYAL AIR FORCE. USE	of B	RITISH	PETRO	L BY				20
ROYAL COMMISSION ON S.	AFETY	IN COA	AL MIN	ES			55,	220
ROYALTIES IN THE COAL	MININ	G INDU	STRY					
Amount paid for			• •	• •	• •	• •	155,	
Welfare levy on	• •	• •	• •	• •	• •	• •	• •	33
"SAFETY BADGE" SCHEM	1E							71
SAFETY CLASSES FOR BOX	7S							71
SAFETY IN COAL MINES.	Roya	L COM	MISSION	ON			55,	220
SAFETY IN MINES RESEAR	есн В	OARD	_				-,	
Grants made to, by M				nittee				38
List of members and	Commi	ttees					217,	218
Work of		• •				• •	• •	64
SAFETY LAMPS.—								
Number and type in u	ise	- 66 +:	• •					
Statutory Rules and C Testing of	Jraers	апести	ıg		• •			58 65
SALT.—	• •	• •	• •	• •	••	• •		00
Imports and exports							50	174
Imports and exports Output		• •			••	50, 1	17, 119,	124
SAND (see also "Gravel and								
								1/4
SAND. GRAVEL AND (see	also '']	Mouldin	ng and	pig-bed	l sand	. '').—	10 105	1770
Persons employed	*. *	• •	• •	115,	, 110,	117, 1	18, 125,	1/3
Output Persons employed Purposes for which us	$_{ m ed}$				• •	• •		173
SANDSTONE.—								
Accidents at quarries	getting	Σ						196
Output	••	• •			116,	117, 1	19, 125,	173
Persons employed		• •						144
Purposes for which us	ed	• •	• •	• •	• •	• •	• •	173
SCHOLARSHIP SCHEME. M	INERS'	WELFA	ARE NA	TIONAL	L		38,	217
SCIENTIFIC RESEARCH AND	ENQ	UIRY.—	-See " I	Researc	h."			
" Scotch" SALT.—Output								117
SCYTHE-STONES, PULPSTON		RINDSTO	NES, ET	rc.—O	utput			173

							AGI
SELLING SCHEMES	•		• •	• •	• •	3	3, 2
SEPTICÆMIA OR BLOOD-POISON	ING	• •		• •	• •		9'
Shaft Accidents 80, 91	, 98, 102,	182,	184, 186	, 190,	203,	Charts I	V, V
SHALE.—See "Clay, Shale, etc	."						
Shale. Oil.— Output Persons employed		• •		106,	117,	122, 123,	124 144
SHALE OIL INDUSTRY (SCOTTI	:sн)					15, 106,	103
SHOTFIRERS' CERTIFICATES.—S	See '' Exa	mina	tions."				
Shot-firing.—							
Electrical apparatus. Tes Explosions due to Methods of firing: numb		· · ·	· · ·			···	67 97
fired	er or mr		··			180,	18
Sub-Committee							217
SIGNALLING APPARATUS. TES	TING OF						67
SILICA STONE (INCLUDING G			SILICA				
Refractory Material.	-		* *	• •	47,	115, 119,	125
SILVER.—Obtainable from Bri			• •	• •	• •	• •	122
SINKING OF NEW PITS AND I	DRIFTS.	DEVE	ELOPMENT	IN			21
SLATE.—						00 101	100
Accidents at mines and que Imports and exports				• •		194,	
Man-shifts worked at mine						• • •	194
Output Persons employed			• •	• •		116, 119,	$\frac{124}{144}$
	• •	• •	• •	••		••	1 7
SOAPSTONE.—See "Talc, etc."							
SPELTER.—See "Zinc."	-						0.0
Spiralarm, Naylor, Firedar			• •	••	• •		62
STATUTORY RULES AND ORDE 1911	RS MADE	UNDI	ER THE C	OAL I	Mine:	s Acr, 56	, 63
STEAM COAL.—							
Exports	• •	• •	• •	• •	• •	168, 176.	
STEATITE.—See "Talc, etc."	••	• •	• • •	•	•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
STEEL (see also "Iron and Stee	el '').—						
Output of ingots and cast	ings						43
Prices			• •	• •	• •	• •	43
STEEL WORKS.—Coal and coke		ed at	• •	• •	• •	• •	160
STOCKS OF COAL AT PIT-HEAD		• •		••			5
STONES AND SLATES (see of "Sandstone," "Slate," et	also "Ig c.).—Imp	neous orts a	s Rocks, and expo	rts	Lime	stone,''	174
Stores and Timber. Cost of	OF, AT CO	AL N	IINES			155,	158
STRONTIUM. SULPHATE OF.—						117, 122,	125
SUBSISTENCE WAGES PAID TO	COLLIER	y W	ORKERS				150

				P.	AGE							
Suffocation by Natural Gases.	Accident	IS DUE TO		86, 182,	190							
SULPHATE OF AMMONIA, YIELD OF,	FROM OII	SHALE			106							
SURVEYORS' CERTIFICATES See " E	xaminatio	ns.''										
TALC, STEATITE AND SOAPSTONE.—												
Imports and exports					174							
TAXATION OF HYDROCARBON OILS AND PETROLEUM PRODUCTS.— See "Import Duties."												
Telephones. Testing of Mining	Bells, R	ELAYS AND			67							
Testing and Approval of Safety Appliances, etc.—See "Safety Lamps, Safety Lamp Bulbs, Breathing Apparatus, etc."												
Thornton Firedamp Detector \dots					62							
TIMBER. COST OF STORES AND, AT	COAL MI	NES		155,	158							
TIN.—												
Imports and exports	• •	••			174							
Obtainable from British ores Prices	• •				122							
Regulation of exports. Interna	tional				44							
TIN ORE.—												
Imports and exports				44,	174							
Output	• •			118, 124,								
Prices	• •	• • • • • • • • • • • • • • • • • • • •	• •	• •	45							
Tin Ore and Arsenic Mines.— Accidents at					104							
Accidents at Man-shifts worked					194							
Persons employed				44,	144							
TRADE AGREEMENTS					8							
TRAINING OF BOYS					70							
T				122, 124,								
TUNGSTEN ORE.—Output	• •	• • • •	• •	122, 127,	100							
Umber, &c. Ochre.—Output				117, 119,	125							
Undermanagers' Certificates.—S			• •	***, ****,	110							
URANIUM ORE.—Output					124							
Claimed Cast. Suspending			•	• •								
Value of Minerals obtained.—S	iee " Prices	s.''										
Wages and Earnings.—												
Coal Mining Industry:	f			150 154	150							
Allowances in kind. Value Cost of, per ton, in the pro-	duction of	coal		152, 154, 155, 156,								
District Agreements	• •			30,	148							
Earnings of workers		26	31,	152, 154,								
Flat rate increases	es of basis	wage rates	• •	29, 30,								
Percentage payable in exce Subsistence wages	ss or pasis	wage rates		29, 30,	150							
Waste-heat Coke Ovens					170							
WATER. ACCIDENTS DUE TO IRRU	PTIONS OF		87,	182, 186,								

Welfare Fund. Mines	, ,						F	PAGE
Baths Fund							33	2/
Committee of Manage	mont	• •		••	• •	••		216
Cost of contributions	on the	produc		coal	• •	• •	02,	
man a contract of the contract	on the	-			• •	•••	33	
771 1 7 1.1			• •	• •	• •	• •	00	
				• •	• •	••	33	
Grants made for educ				::	• •	••	36	
Mining Industry (We					• •	• •		34
National Scholarship					• •	• •	38,	
Purposes for which a	Dontin	na mara r a	mada	• •	• •	• •	. 00,	
					• •		••	30
WITHERITE (see also "Ba	<i>u</i>			/				
						• •		51
Output								117
WHARNCLIFFE WOODMOO	r Coli	JERY.	Yorksi	HIRE.	Disas	ter at		56
Workmen's Compensation							nd	
disease reported and							204,	205
	the am	ount or	compe	nsation.	pard	• •	201,	
WORLD COAL OUTPUT	• •	• •	• •	• •	• •	• •	• •	4
Tarra (an Consens)								
ZINC (OR SPELTER).—								174
Imports and exports				• •		• •		
Obtainable from Brit			• •	• •	• •	• •	• •	122
Prices	• •	• •	• •	• •	• •	• •	• •	46
ZINC MINES. LEAD AND								
Accidents at								194
Man-shifts worked								194
Persons employed							46,	144
ZINC ORE.—								
Imports and exports								174
Output		• •		• •		 114, 122		
Prices		• •	• •	• •				
I Hees	• .•	• •		• •	• •	• •		40

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